



Environmental Protection Department

Water Guidance and Monitoring Division

UCRL-AR-125915-07-4

LLNL Experimental Test Site 300 Compliance Monitoring Report for Waste Discharge Requirement (WDR) Order No. 96-248

Annual/Fourth Quarter Report 2007

Author

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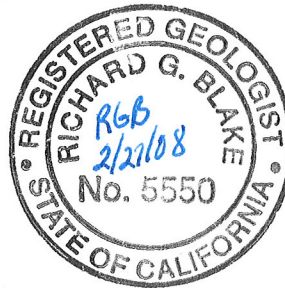


**Lawrence Livermore
National Laboratory**

**This work performed under the auspices of the U.S. Department of Energy by
Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.**

Certification

I certify that the work presented in this report was performed under my supervision. To the best of my knowledge, the data contained herein are true and accurate, and the work was performed in accordance with professional standards.



Richard G. Blake 2/27/08

Richard G. Blake

Date

California Registered Geologist

No. 5550

License expires: July 31, 2008

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List of Abbreviations and Acronyms

3CMP	samples collected at Site 300 for Compliance Monitoring Program
3EMG	samples collected at Site 300 for the Water Guidance and Monitoring Group
3GIV	samples collected at Site 300 for site investigations
3VES	three casing volumes purged using an electric submersible pump
BCLABS-BAK	BC Laboratories, Inc. in Bakersfield, CA
BOD	Biochemical oxygen demand
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CMP	Compliance Monitoring Program (conducted under CERCLA)
CMR	Compliance Monitoring Report (prepared under CERCLA)
CoC	(or COC) chain-of-custody form
CVRWQCB	Central Valley Regional Water Quality Control Board
DO	dissolved oxygen
DSWP	sewage percolation pond influent sampling location
DTW	depth to (ground)water
EC	electrical conductivity, or specific conductance (SC)
ESWP	sampling location within sewage evaporation pond
GF	Grundfos pump
FRUITGROWL	FGL Environmental Laboratories in Stockton, CA
ft	feet
gal	gallons
gpm	gallons per minute (measurement of flow)
GWE	Ground water elevation (above mean sea level)
HSU	hydrostratigraphic unit
ID	identification number
ISWP	sewage evaporation pond influent sampling location
LLNL	Lawrence Livermore National Laboratory
MCL	maximum contaminant level (for drinking water)
mL	milliliters

List of Abbreviations and Acronyms (concluded)

MPN	most probable number
MRP	monitoring and reporting program
mV	millivolts (measure of oxidation-reduction potential)
NA	not applicable
ND	none detected, or not detected
NO ₃	nitrate
NR	analysis not required by Permit at this sampling location
pH	measure of the acidity or alkalinity of a solution
OG	off gassing measured by scale of 1-5, 5 being high amounts of off gassing
OU	Operable Unit under CERCLA
Q	flow rate, or number of well volumes purged (according to context)
Qal	Quaternary Age alluvial deposits
QC	quality control
Qt	Quaternary Age terrace deposits
SC	specific conductance, or electrical conductivity (same as EC)
SHO	short analytical holding time (such as samples for coliform bacteria analyses)
VOA	samples collected for analysis of volatile organic compounds
WDR	waste discharge requirements (Permit)

Executive Summary

This report contains the elements required by Waste Discharge Requirements (WDR) 96-248 (Permit) for the combined 2007 fourth quarter and annual report. This is the twelfth annual report prepared under this Permit. Compliance monitoring networks discussed in the report include:

- Wastewater monitoring for the sewage evaporation and percolation ponds (in **Sections 2.1, 2.2, and 2.3**)
- Ground water monitoring for the sewage evaporation and percolation ponds (in **Sections 2.4 and 2.5**)
- Observations at the percolation pits (in **Section 3.0**).

Monitoring data indicated compliance with the limits for the ground water and wastewater at the sewage evaporation and percolation ponds. No data gaps were identified and there are no obvious impacts to ground water around the sewage ponds in 2007.

None of the permitted mechanical equipment percolation pits overflowed during 2007.

1. Introduction

This report satisfies the 2007 combined fourth quarter and annual monitoring and reporting requirements of the Central Valley Regional Water Quality Control Board's (CVRWQCB) *Waste Discharge Requirements* (WDR) 96-248, hereafter Permit (CVRWQCB, 1996). It details the monitoring results of one compliance monitoring network and visual observations at a second wastewater disposal system.

The first network analyzes samples of ground water beneath, and wastewater discharged into, sewage evaporation and percolation ponds (sewage ponds) where sanitary waste is treated. The second network entails visual monitoring of five percolation pits that receive mechanical equipment wastewater.

The Experimental Test Site (Site 300), operated by Lawrence Livermore National Laboratory (LLNL), is located in the Altamont Hills approximately 10.5 kilometers (6.5 miles) southwest of the city of downtown Tracy, California. **Figure 1** shows the locations of the equipment percolation pits in the Explosives Process Area and the sewage ponds in the General Services Area.

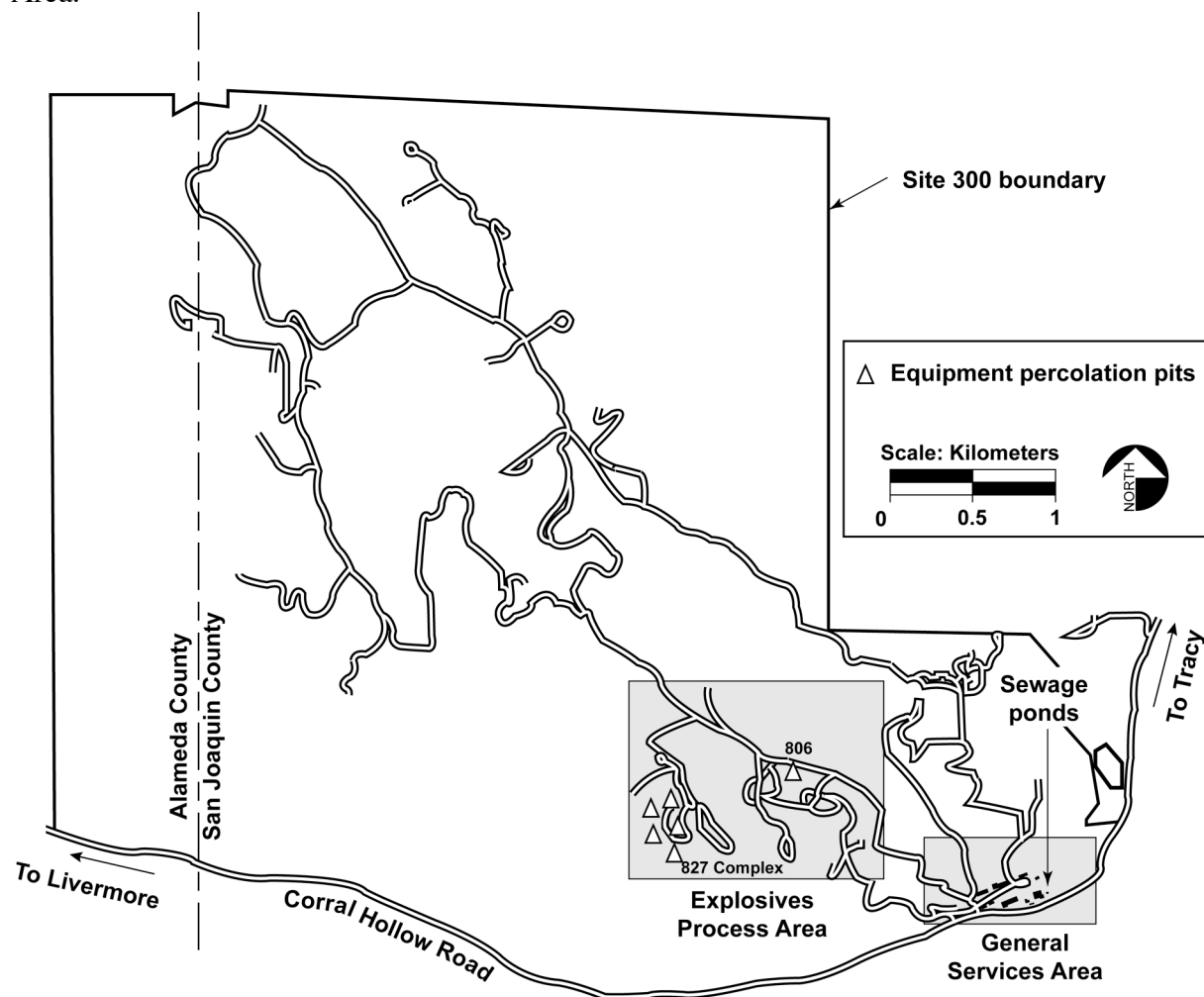


Figure 1. Location of sewage evaporation and percolation ponds and equipment percolation pits.

2. Sewage Evaporation and Percolation Ponds

2.1. Compliance Monitoring Program

Monitoring required for the sewage ponds is specified in the Monitoring and Reporting Program (MRP) 96-248, Revision 2 (Condon, 2006), of the Permit. Applicable reporting requirements are found in the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements* (CVRWQCB, 1991) and in the MRP.

Quarterly samples of wastewater flowing into the sewage evaporation pond are collected for analysis by grab sampling from a location west of the pond (sampling location ISWP in **Figure 2**). ISWP is a manhole that captures all waste streams before they flow into the pond. The samples are analyzed for specific conductance (SC, also commonly known as electrical conductivity), pH, and biochemical oxygen demand (BOD).

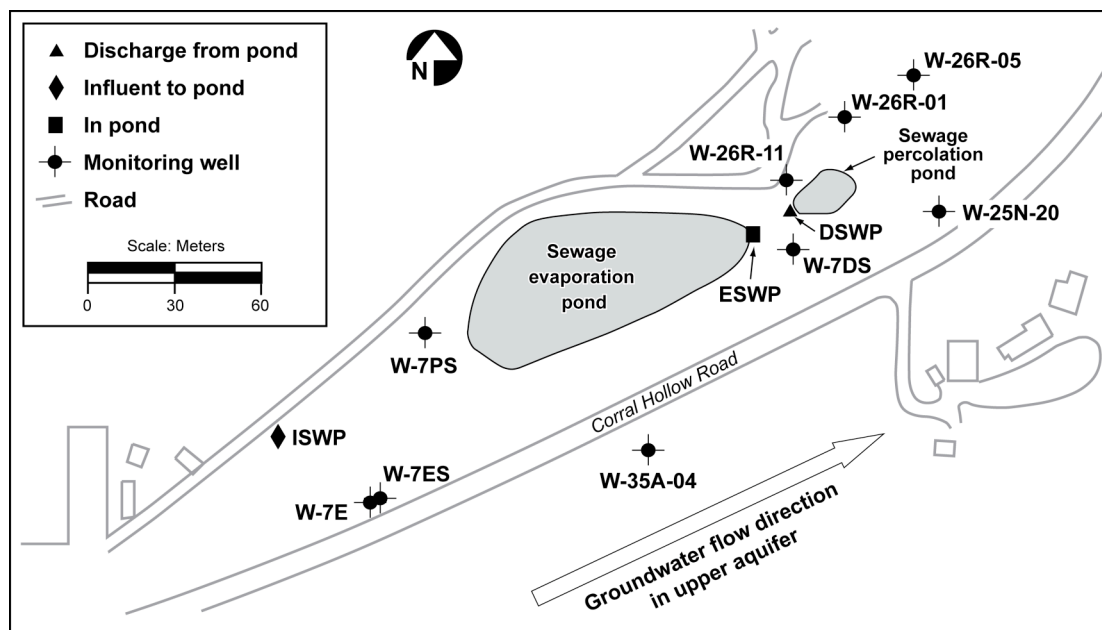


Figure 2. Site 300 sewage evaporation and percolation ponds and ground water and wastewater compliance monitoring locations.

Quarterly wastewater samples of the pond contents are collected by grab sampling from a dock at the eastern end of the sewage evaporation pond (sampling location ESWP) and analyzed for pH, SC, and dissolved oxygen (DO). Any discharge from the sewage evaporation pond to the sewage percolation pond (sampling location DSWP) is grab sampled and analyzed for BOD, SC, total and fecal coliform bacteria, and pH.

Observations of the pond are made and recorded at least monthly for freeboard, color, odor, and levee condition. **Appendix A** contains the fourth quarter field observation logs for the sewage

ponds. Some animal burrows were observed in the levee. These burrows continue to be monitored by operations personnel to ensure that the integrity of the levee is not compromised. Leak detection and monitoring compliance at the sewage ponds is accomplished by monitoring the shallow ground water beneath and adjacent to them. Ground water monitoring includes semiannual sampling and analysis of the collected samples for SC, nitrate, total and fecal coliform bacteria, and pH. Ground water elevations are routinely recorded and contoured.

Figure 2 shows the locations of the monitor wells with respect to the ponds. Specifications for each well are given in **Appendix B**.

2.2. Wastewater Sampling and Analysis

Calibration is performed on DO, SC, and pH meters less than 12 hours before sampling. DO, SC, pH, and temperatures of the samples are measured and written on the field tracking forms (field logs) when the grab samples from ISWP, ESWP, and DSWP are collected. Chain-of-custody (CoC) forms are filled out appropriately and signed by the sampler for each analytical laboratory to which the samples are transferred; CoC numbers are also written on the field logs. Analytical methods used are appropriate EPA-approved Methods (U.S. Environmental Protection Agency, 2005) or Standard Methods (Clesceri *et al.*, 1998).

Fourth quarter samples from locations ISWP and ESWP were collected on November 28, 2007. Wastewater samples are collected, analyzed, and results entered into the Environmental Protection Department's database according to a complete set of written protocols known as the *Environmental Monitoring Plan* (Woods, 2005).

2.3. Wastewater Monitoring Results

All required wastewater monitoring parameters for the sewage ponds were in compliance with the Permit's provisions and specifications throughout 2007. **Appendix C** contains the logs including field measurements for fourth quarter wastewater monitoring. There were discharges from the sewage evaporation pond to the sewage percolation pond, which began in February 2007 and continued through March 12, 2007 (Brown, 2007). One discharge sample was collected during the first quarter (Table D-4). Historical plots for all monitoring data and tabular summaries of the 2007 data are included in **Appendix D**.

As reported in a letter to the Central Valley Regional Water Quality Control Board (Goodwin, 2007): "On August 26, 2007, a wildfire broke out at Site 300 in the area known as 832 canyon. The fire was bounded by Routes 1 and 2 and did not cross these paved roads. The fire did not damage any permanent facilities.

The California Fire (CalFire), Alameda County, and the City of Tracy responded to support the Lawrence Livermore National Laboratory (LLNL) Fire Department. A CalFire helicopter equipped to pick up water from surface water bodies, used the Site 300 Sewage Evaporation Ponds, the nearest body of water, to fill his bucket to fight the fire. The bucket capacity is between 250 and 300 gallons. Up to two buckets of wastewater were dropped on the grassland fire in the firefighting efforts in the southern portion of the fire. The fire was east of the stream course in the bottom of the canyon, and it is not believed that any of the wastewater reached the surface water drainage course.

It is normal procedure for a fire-fighting helicopter to use the nearest source of water. The pilot was unaware that this body of water was in fact a sewage treatment facility. The on-scene incident commander was not aware where the water had come from until after it was dropped. During the post incident review by the LLNL Fire Department, it was noted that the sewage pond should be avoided and future incident commanders will direct pilots to avoid using the sewage pond as a water source.

Following the fire, the pilot was alerted that he had picked up sewage in his bucket and the pilot took steps to decontaminate his equipment. LLNL sewage pond operators inspected the sewage evaporation pond and the aeration equipment on Monday, August 27; there was no damage to the pond, its levy, or the aeration equipment."

2.4. Ground Water Sampling and Analysis

Semiannual sampling of ground water from wells at the sewage evaporation pond was conducted during the first and the third quarters of 2007. Ground water samples were collected, analyzed, and results entered into the Environmental Protection Department's database according to a complete set of written protocols (Goodrich and Wimborough, 2006). The monitor wells were purged and sampled according to prescribed methods assigned to each monitor well. The collected samples were transferred to an offsite analytical laboratory for analyses of SC, nitrate, and pH, as well as other analyses specified by the ground water monitoring field logs. Following the initial sampling event, each well was treated with a pre-calculated dose of chlorine and pumped to circulate the chlorine throughout the water column. On the following day, wells were purged and tested for residual chlorine and samples were collected and analyzed for total and fecal coliform bacteria at an offsite analytical laboratory. Wells that tested positive for chlorine were pumped until chlorine was not detected prior to sampling, according to the aforementioned written protocols.

2.5. Ground Water Monitoring Results

Semiannual ground water samples were collected and analyzed during the first and third quarters of 2007. All monitored parameters were in compliance with the Permit limits during 2007. No coliform bacteria was detected in any ground water samples and concentrations of nitrate detected in ground water samples collected and analyzed in 2007 remained below the drinking water maximum contaminant level (MCL) of 45 mg/L for eight of the nine wells (W-7PS was dry during the 2007 sampling events) in the monitoring network. For each monitor well in 2007, concentrations of nitrate detected in the samples collected were approximately equal to the mean concentration of nitrate detected over the monitoring history.

Historical data plots and tabular annual summaries of the analytical data are included in **Appendix E**. Historical concentrations of nitrate (as NO_3) in ground water upgradient from the sewage ponds in this network have ranged from < 0.4 mg/L in monitor well W-7E to 26.9 mg/L in monitor well W-7PS (in August 2001). Historical concentrations of nitrate in ground water samples collected downgradient of both sewage ponds have ranged from < 0.44 mg/L to 54.5 mg/L in monitor well W-26R-05 in August 2001. LLNL will continue to monitor these wells and any discharges into the percolation pond.

Appendix F contains the ground water elevation contour maps (Dibley et al. 2007) for the shallowest ground water zones (Hydrostratigraphic Units [HSUs]); these maps were produced for the LLNL activities conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) for the Compliance Monitoring Program (CMP). The CoCs and laboratory analytical results are stored at LLNL and are available upon request.

3. Percolation Pits

MRP 96-248 requires monthly inspections of the percolation pits at Buildings 806A, 827A, 827C, 827D, and 827E (see **Figure 1**). Sampling and analysis for metals are required whenever an overflow occurs. There were no overflows from any of the permitted percolation pits to the ground surface during 2007, although there may be standing water that has yet to percolate in some of the percolation pits at any given time. **Appendix G** contains the fourth quarter field observation logs for the percolation pits.

References

Brown, R. (2007), *LLNL Experimental Test Site 300 Compliance Monitoring Report for Waste Discharge Requirements 96-248, First Quarter 2007*, Lawrence Livermore National Laboratory, Livermore, CA (UCRL-AR-125915-07-1).

Clesceri, L.S., Greenberg, A.E., and Eaton, A.D., Ed. (1998), *Standard Methods for the Examination of Water and Wastewater*, 20th ed.

Condon, C. (2006), Letter from the Central Valley Regional Water Quality Control Board to Ellen Raber re: *Revision of Monitoring and Reporting Program 96-248, Lawrence Livermore National Laboratory Site 300, Alameda and San Joaquin Counties*, March 7, 2006.

CVRWQCB (1991), *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*, Central Valley Regional Water Quality Control Board, March 1, 1991.

CVRWQCB (1996), *Order No. 96-248, Waste Discharge Requirements for University of California Lawrence Livermore National Laboratory Experimental Test Site (Site 300) and US Department of Energy Evaporation and Percolation Ponds and Class II Surface Impoundments, San Joaquin and Alameda Counties*, September 20, 1996.

Goodrich, R., and J. Wimborough (2006), *LLNL Livermore Site and Site 300 Environmental Restoration Project Standard Operating Procedures (SOPs)*, Lawrence Livermore National Laboratory, Livermore, CA (UCRL-MA-109115, Rev. 12).

Goodwin, S. (2007), *Release of Sewage Pond Wastewater to Ground While Fighting a Wildfire at Lawrence Livermore National Laboratory Experimental Test Site (Site 300)*, Lawrence Livermore National Laboratory, Livermore, CA (WGMG07-102).

U.S. Environmental Protection Agency (2005), *Title 40 Code of Federal Regulations, Part 136*.

Woods, N., Ed. (2005), *Environmental Monitoring Plan*, Operation and Regulatory Affairs Division, Environmental Protection Department, Lawrence Livermore National Laboratory, Livermore, CA (UCRL-ID-106132, Rev. 4).

Acknowledgments

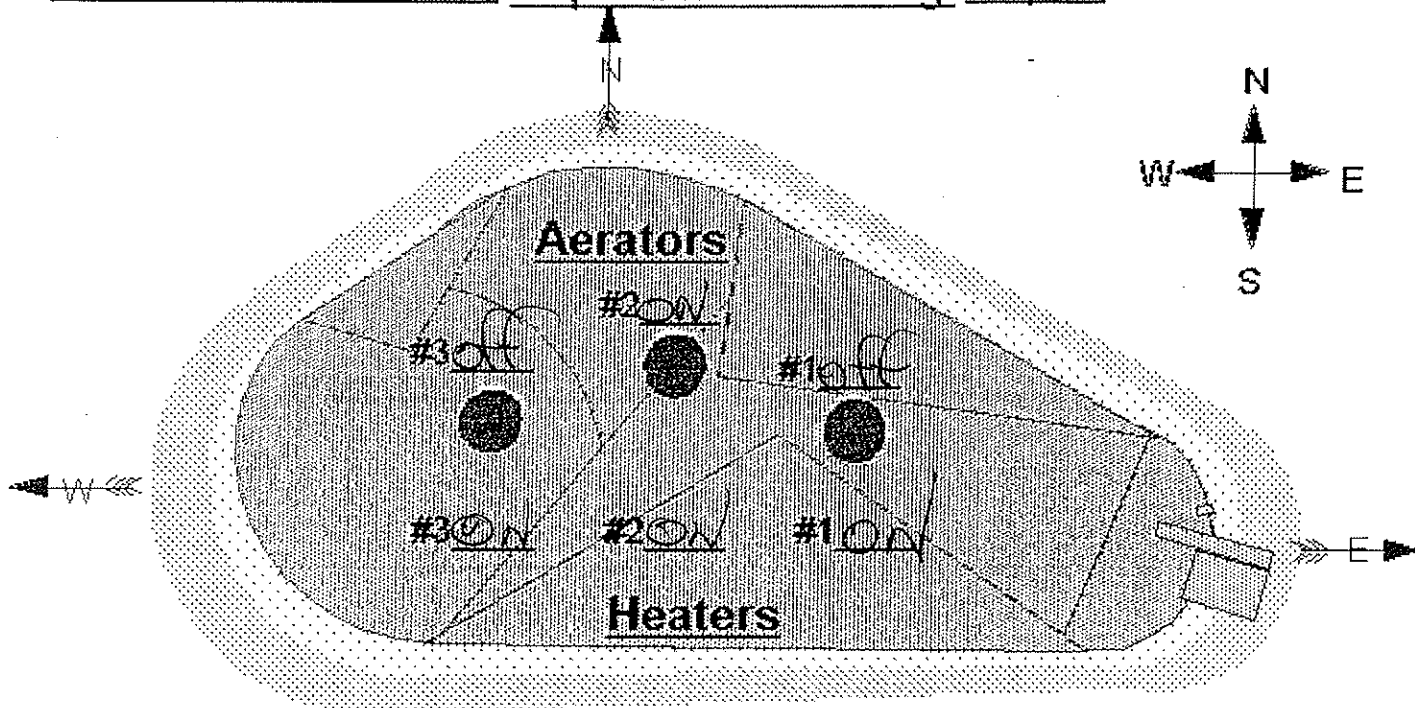
The compliance monitoring program for WDR 96-248 could not be conducted without the dedicated efforts of many people. LLNL sampling technologists sampled the wastewaters, coordinated by Bob Williams, and the monitor wells, coordinated by Eric Walter, and packaged the samples for shipment to the off-site analytical laboratories. Off-site analytical support was provided by BC Laboratories, Inc., and FGL Environmental Laboratory. Becky Goodrich and Hildy Kiefer performed quality reviews. John Valett provided well specifications. Rosanne Depue provided essential administrative assistance. Thanks are also due to John Scott, Keith Graham, Hugh Gregg, Karen Folks, and Larry Paukert at Site 300 for their cooperation in this effort. A draft of this report was reviewed by LLNL peers, whose suggestions for improvements are incorporated.

Appendix A

Fourth Quarter Field Observation Logs

Sewage Ponds

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 8.8
 Oxygen 12
 pH 8.86
 Time 1300

Water Level +1"

Water Meter-Stop 485053

Water Meter-Start

Water Added 0

Air Temp. 15.0

Wind Direction E to W

COLOR---

Green ☒

Green Brown

Brown Green

Brown

ODOR---NONE

East-

Water Temp 8.6
 Oxygen 12
 pH 8.69
 Time 1330

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ☒

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level See Note

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by Don Sargent

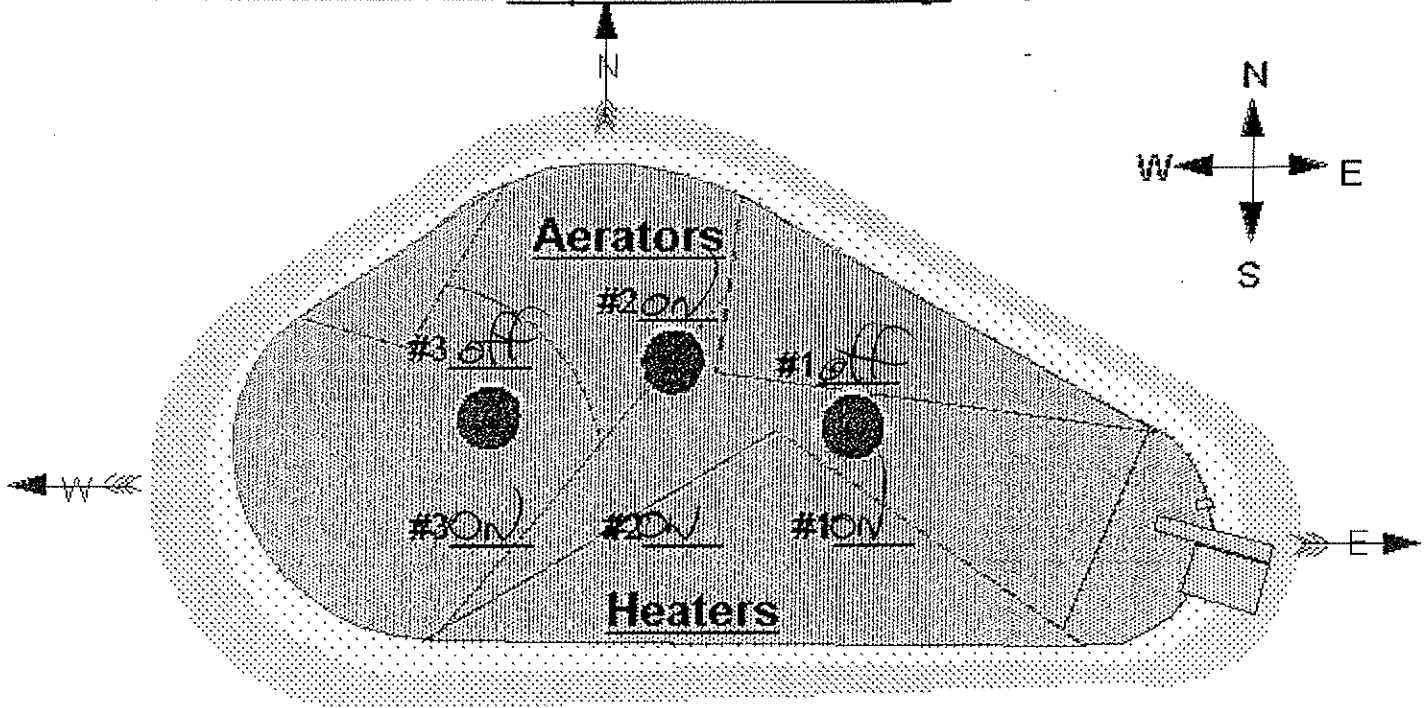
12.30.07
 Date

Supervisor Review Don Sargent

12.30.07
 Date

Comments Water in Year Pit Due to Seasonal Rains

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 9.0
 Oxygen 12
 pH 8.70
 Time 1300

Water Level +1"

Water Meter-Stop 485055

Water Meter-Start

Water Added 0

Air Temp. 17.2

Wind Direction E 46°

COLOR—

Green X

Green Brown

Brown Green

Brown

ODOR—None

East-

Water Temp 9.7
 Oxygen 13
 pH 8.66
 Time 1330

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level See Note

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by Don Sargent

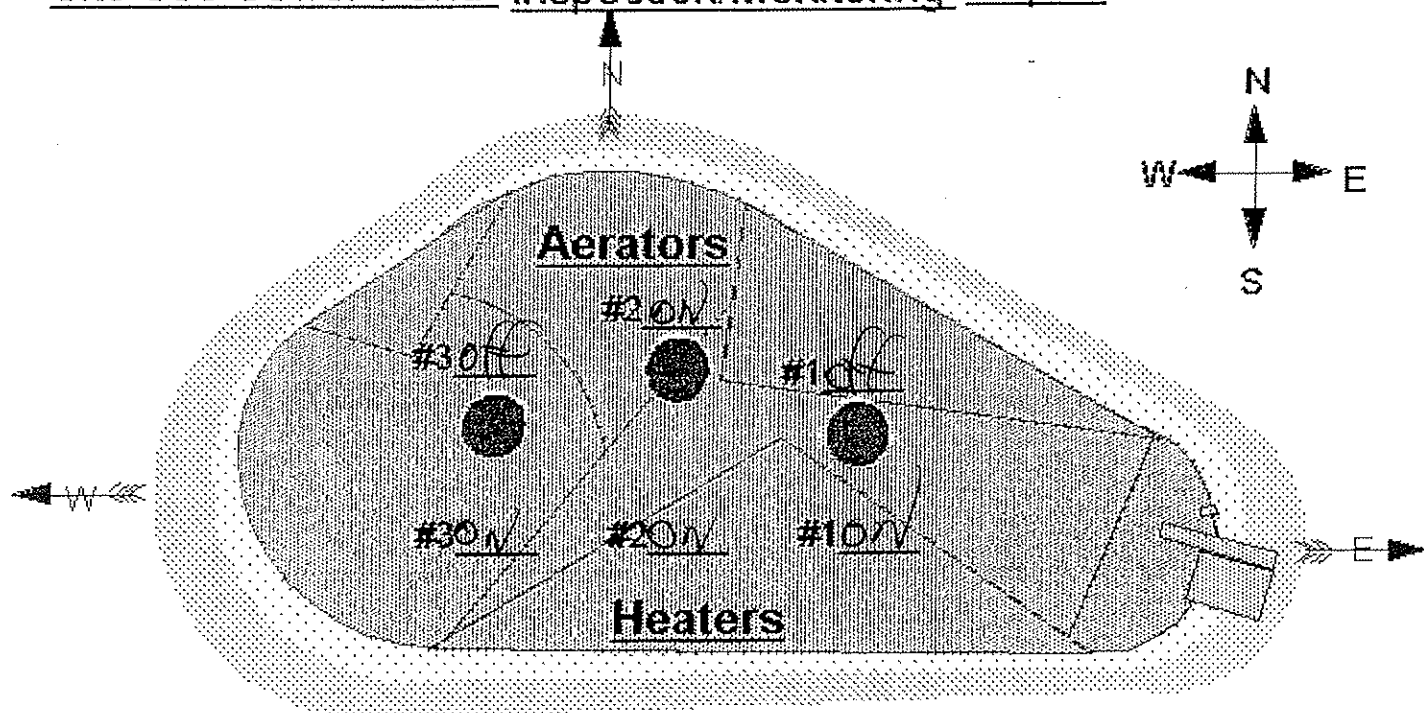
Date 12.26.07

Supervisor Review Don Sargent

Date 12.26.07

Comments Water in Park Pit Due To Seasonal Rains

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 9.2
 Oxygen 10
 pH 8.75
 Time 1200

Water Level +1"

Water Meter-Stop 485055

Water Meter-Start

Water Added 0

Air Temp. 12.2

Wind Direction E to W

East-

Water Temp 7.5
 Oxygen 10
 pH 8.89
 Time 1230

COLOR---

Green X

Green Brown

Brown Green

Brown

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ✓

Erosion Some

Animal Burrows Some

Weed Control Some

ODOR--- None

Percolation Pond

Water Level See Note

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by [Signature]

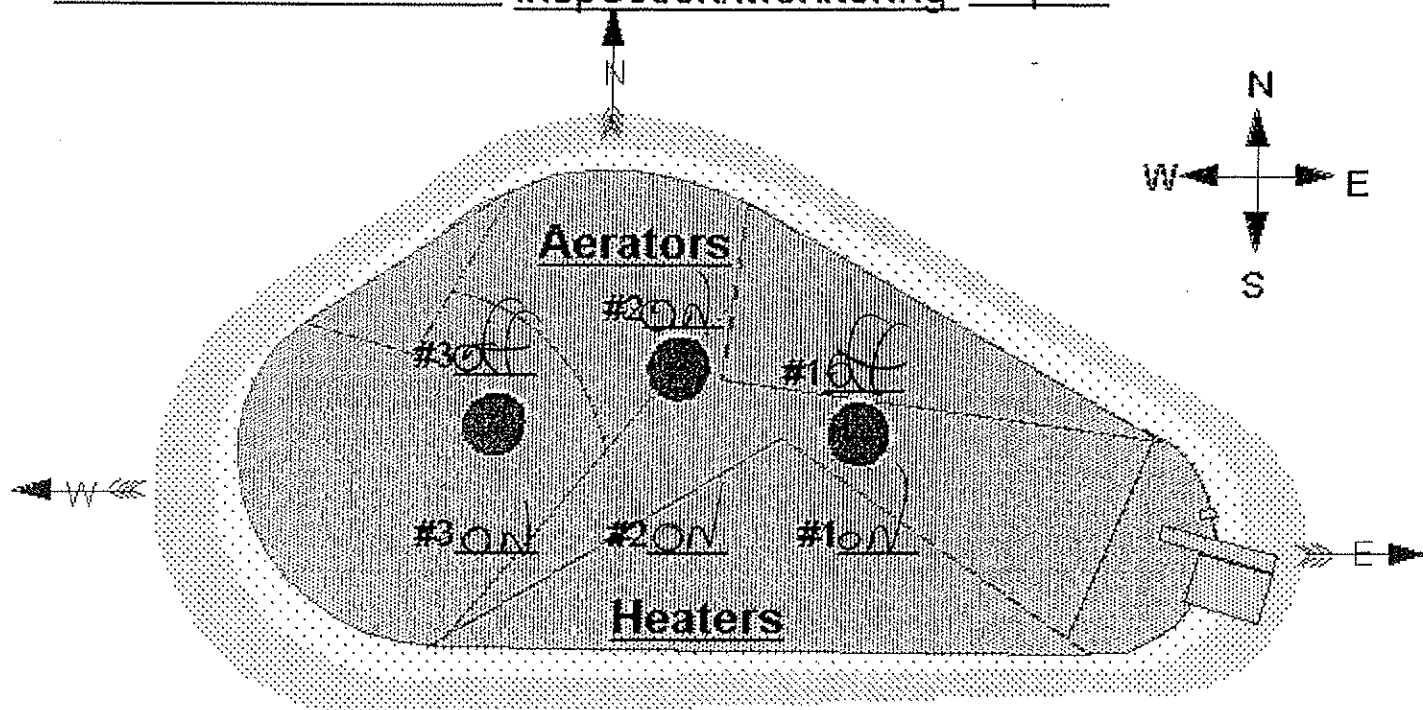
12-23-07
 Date

Supervisor Review [Signature]

12-23-07
 Date

Comments water in Percol Pit Due To Seasonal Rains

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 10.3

Oxygen 10

pH 8.84

Time 1300

Water Level +1

Water Meter-Stop 485055

Water Meter-Start

Water Added 0

Air Temp. 18.3

Wind Direction W to E

COLOR---

Green ☒

Green Brown

Brown Green

Brown

ODOR 1 Slight

East-

Water Temp 11.0

Oxygen 12

pH 8.82

Time 1330

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level See Note

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by DAN BERGENT

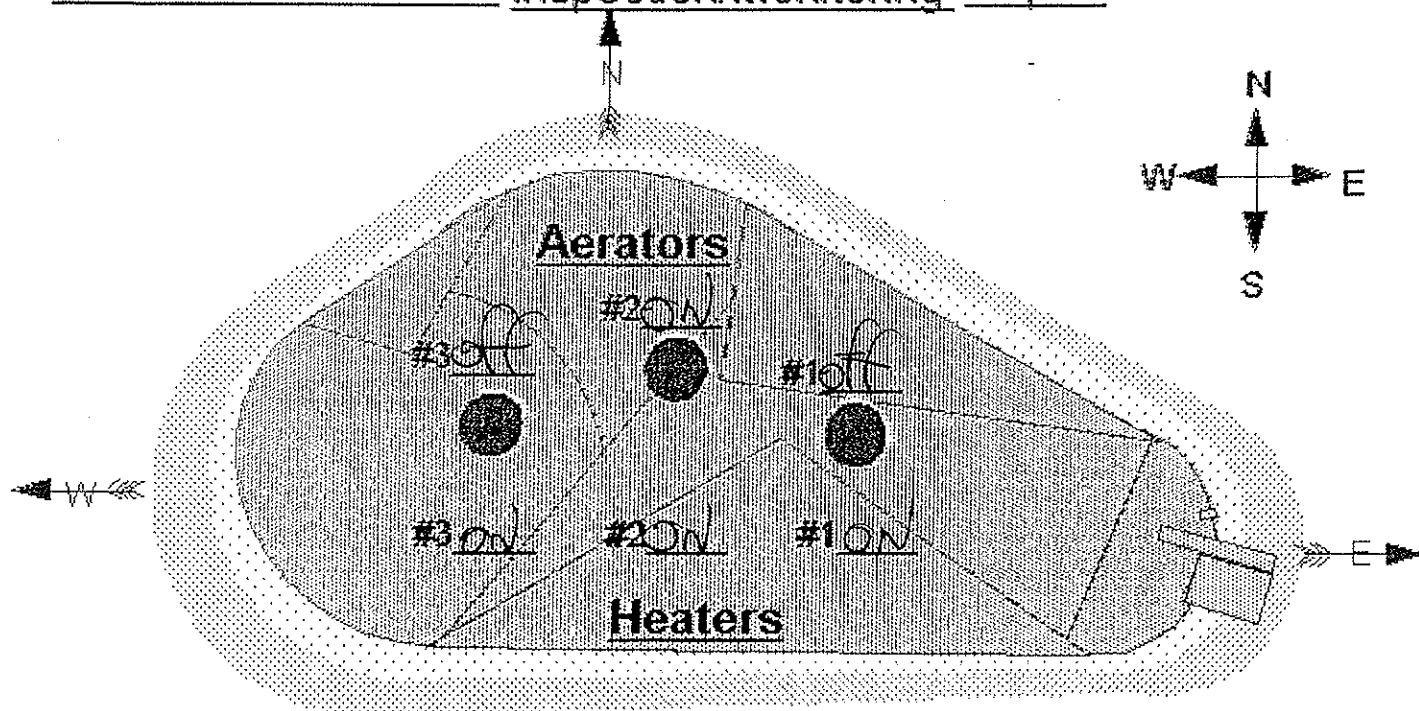
Date 12-20-07

Supervisor Review Dan Bergent

Date 12-20-07

Comments Water in Peek P.t due to SEASONAL RAIN

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 11.2
Oxygen 12
pH 8.72
Time 1400

Water Level +3/4
Water Meter-Stop 488053
Water Meter-Start _____

Water Added 0
Air Temp. 17.2
Wind Direction Caln

COLOR—

Green X
Green Brown _____
Brown Green _____
Brown _____

ODOR—Slight

East-

Water Temp 8.9
Oxygen 12
pH 8.82
Time 1430

Common Bacterium-Per Drop _____
Activated Sludge /
Glass Tube Test /

Erosion Some
Animal Burrows Some
Weed Control Some

Percolation Pond

Water Level See Note
Erosion Some
Animal Burrows Some
Weed Control Some

Inspected by [Signature]

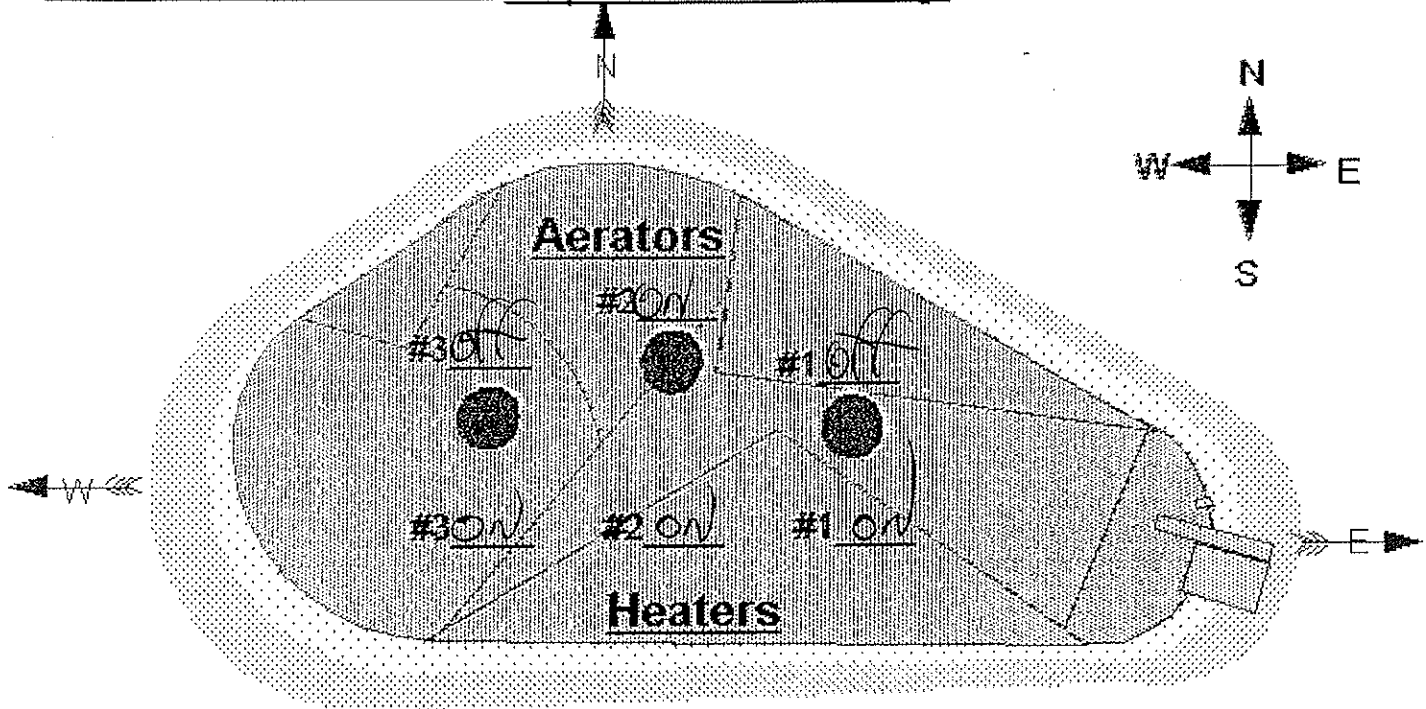
12-17-07
Date

Supervisor Review [Signature]

12-17-07
Date

Comments Water in Percol Pit
Due to Seasonal Rains

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 7.6
Oxygen 1.2
pH 8.73
Time 1:300

Water Level +3/4

Water Meter-Stop 485053

Water Meter-Start

Water Added 0

Air Temp. 17.8

Wind Direction W.E

COLOR—

Green ☒

Green Brown

Brown Green

Brown

ODOR—NONE

East-

Water Temp 9.0
Oxygen 1.2
pH 8.74
Time

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ☒

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level See note

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by Dan Seeger

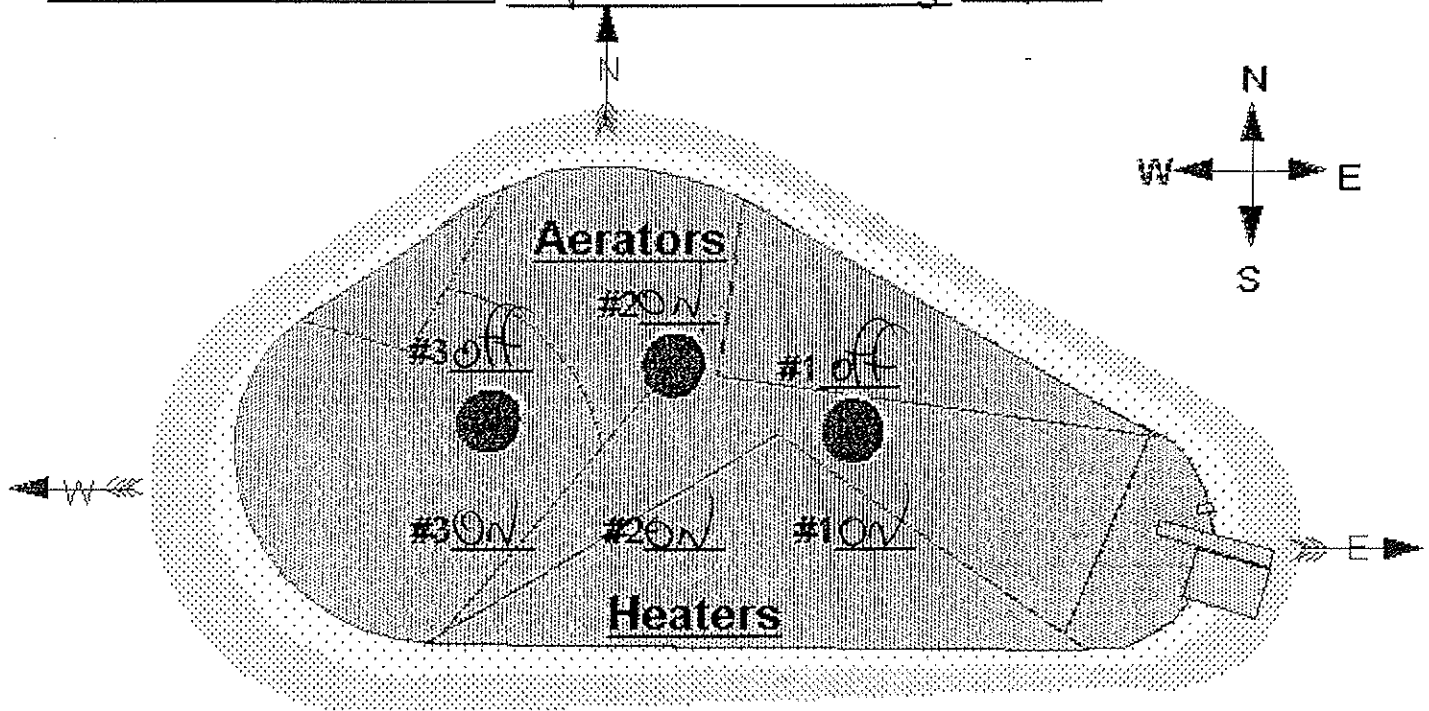
12-13-07
Date

Supervisor Review Dan Seeger

12-13-07
Date

Comments Water in Park Pit due
to SEASONAL RAINS

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 9.6
 Oxygen 10
 pH 8.73
 Time 1300

Water Level +3 1/4"

Water Meter-Stop 485053

Water Meter-Start

Water Added 0

Air Temp. 20.0

Wind Direction E to W

COLOR----

Green ☒

Green Brown

Brown Green

Brown

ODOR None

East-

Water Temp 10.6
 Oxygen 12
 pH 8.77
 Time 1400

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ☒

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level See Note

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by [Signature]

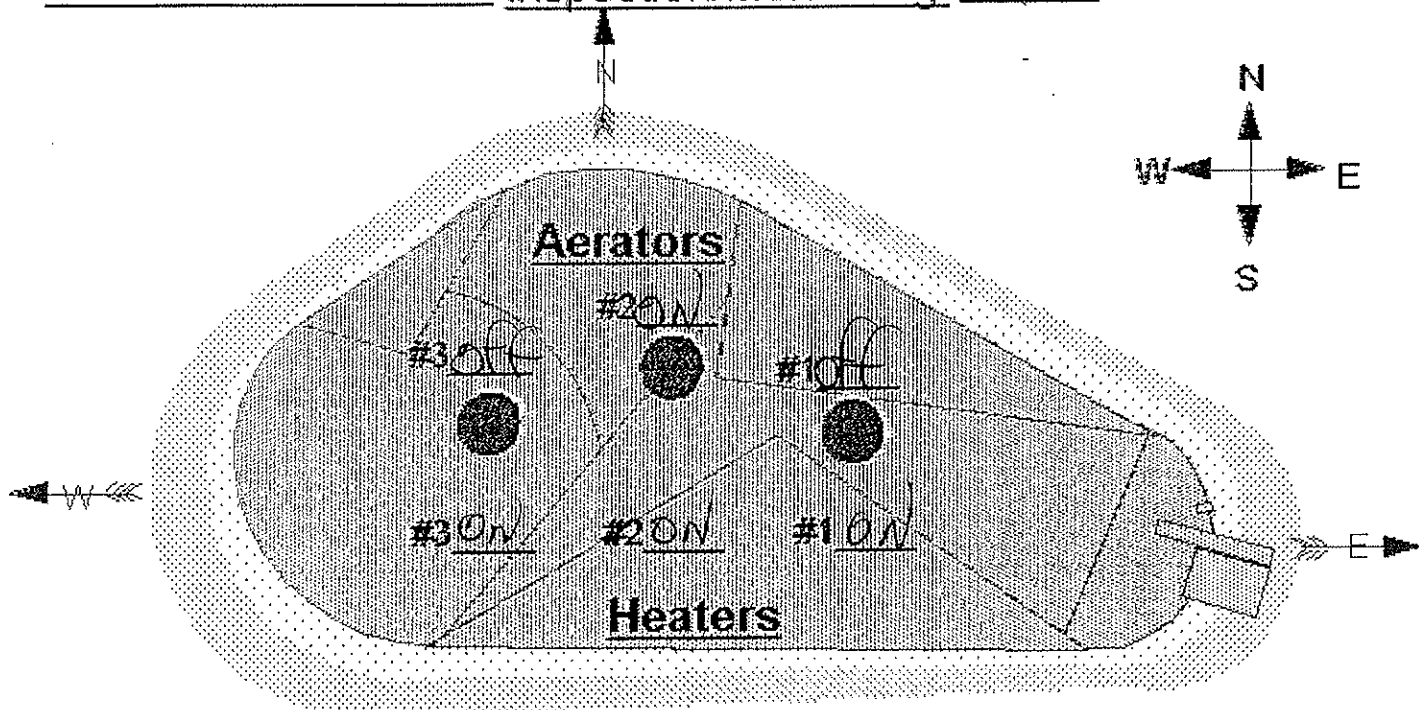
12-10-07
 Date

Supervisor Review [Signature]

12-10-07
 Date

Comments Water in Park Pit due to
SEASONAL RAIN S

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 11.4
 Oxygen 12
 pH 8.81
 Time 1400

Water Level + 1/2

Water Meter-Stop 485055

Water Meter-Start

Water Added 0

Air Temp. 16.7

Wind Direction Calm

COLOR---

Green ✓
 Green Brown
 Brown Green
 Brown

ODOR- Slight

East-

Water Temp 11.2
 Oxygen 12
 pH 8.78
 Time 1500

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ✓

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level Dry

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by [Signature]

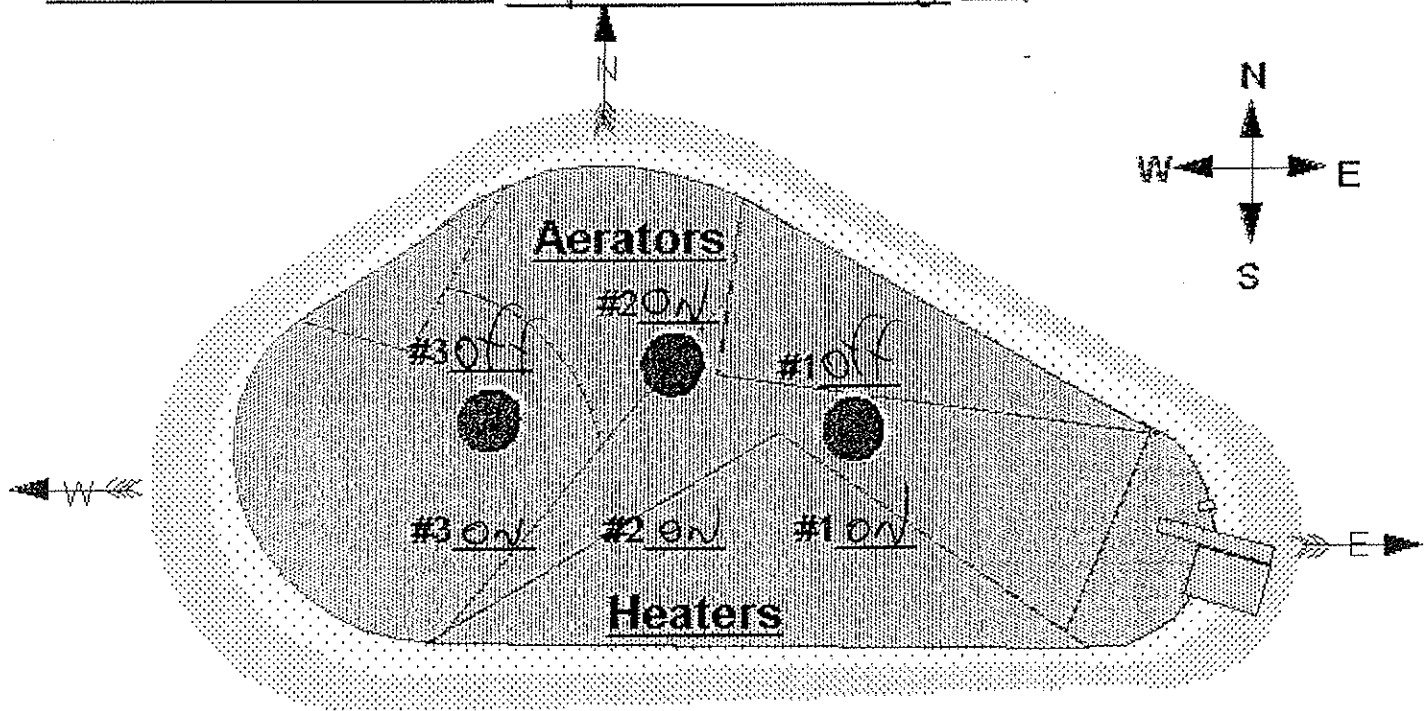
12-6-07
 Date

Supervisor Review [Signature]

12-6-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 12.2
 Oxygen 12
 pH 8.79
 Time 1300

East-

Water Temp 9.8
 Oxygen 12
 pH 8.78
 Time 1330

COLOR---

Water Level 0
 Water Meter-Stop 485055
 Water Meter-Start

Green X
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop

Activated Sludge
 Glass Tube Test ✓

Water Added 0
 Air Temp. 21.1
 Wind Direction Calm

ODOR 1 Slight

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by

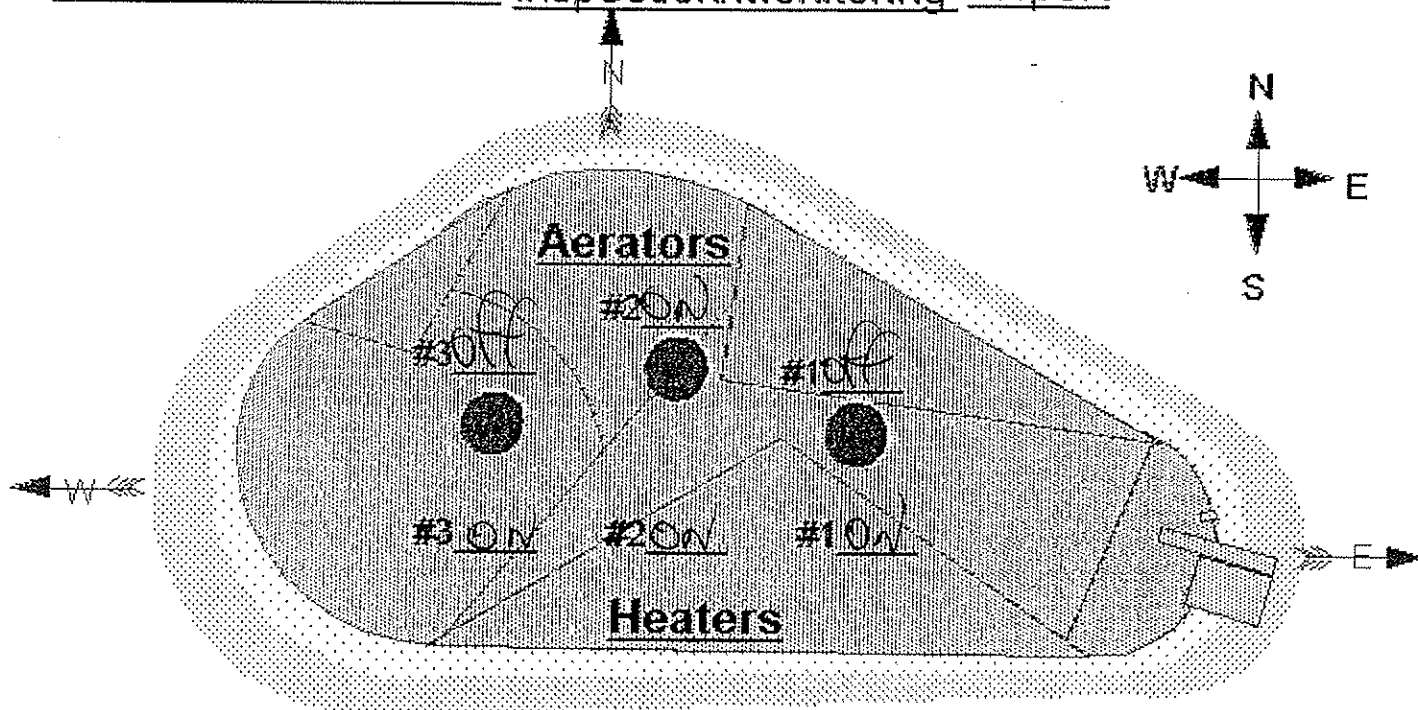
12.3.07
 Date

Supervisor Review

12.3-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 12.0

Oxygen 10

pH 8.91

Time 1300

Water Level 0

Water Meter-Stop 485055

Water Meter-Start

Water Added 0

Air Temp. 1 20.0

Wind Direction E to W

East-

Water Temp 14.4

Oxygen 12

pH 8.95

Time 1330

Common Bacterium-Per Drop

Activated Sludge ✓

Glass Tube Test ✓

Erosion Some

Animal Burrows Some

Weed Control Some

COLOR---

Green ✓

Green Brown

Brown Green

Brown

ODOR Slight

Percolation Pond

Water Level DRY

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by Don Sergent

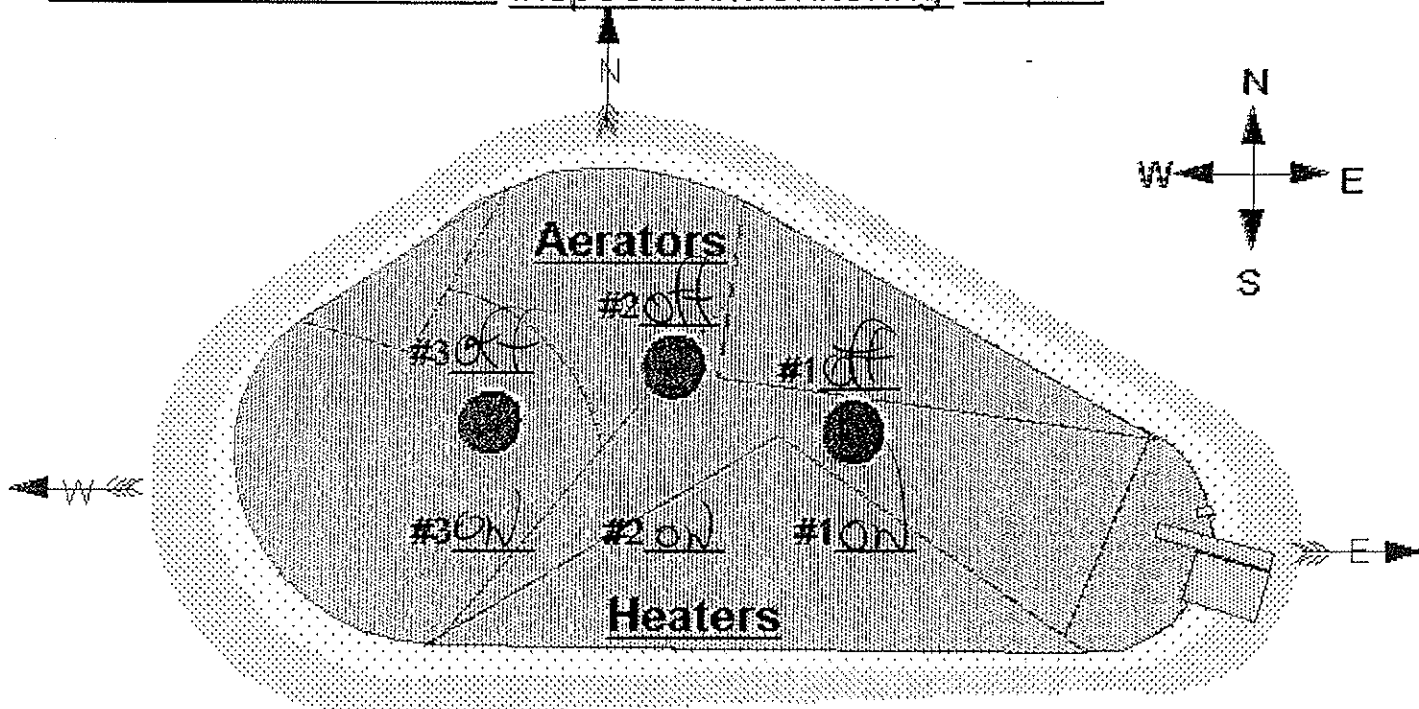
Date 11-29-07

Supervisor Review Don Sergent

Date 11-29-07

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 14.0
 Oxygen 10
 pH 8.96
 Time 1300

East-

Water Temp 11.0
 Oxygen 8
 pH 8.77
 Time 1330

COLOR---

Green X
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop
 Activated Sludge
 Glass Tube Test

ODOR--- Strong

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DDY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by [Signature]

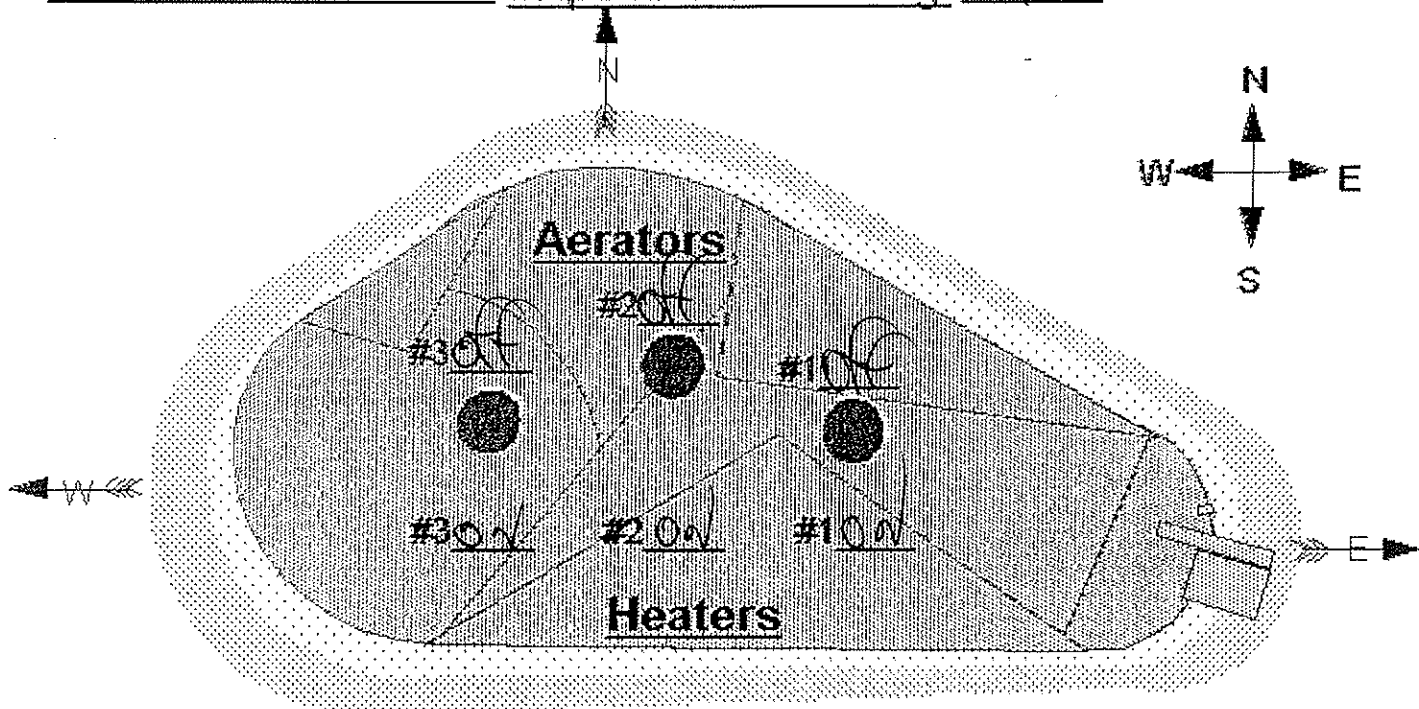
11-26-07
 Date

Supervisor Review [Signature]

11-26-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 15.2
 Oxygen 8
 pH 8.85
 Time 1300

East-

Water Temp 15.5
 Oxygen 10
 pH 8.89
 Time 1330

COLOR---

Green X
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test

Erosion Some

Animal Burrows Some

Weed Control Some

ODOR Light

Percolation Pond

Water Level Dry
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by Dan Selgen

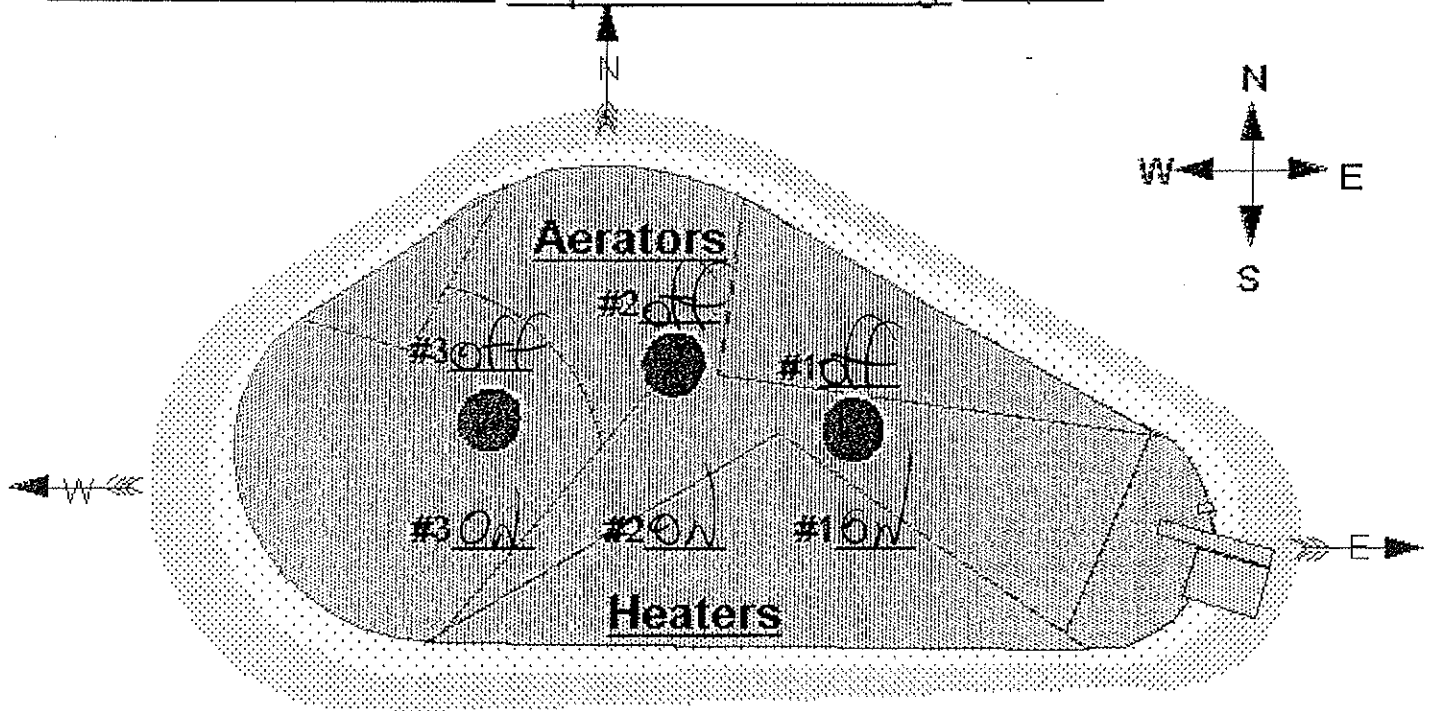
11-20-07
 Date

Supervisor Review Dan Selgen

11-20-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 15.9
 Oxygen 8
 pH 8.93
 Time 1300

East-

Water Temp 18.8
 Oxygen 12
 pH 8.97
 Time 1330

COLOR---

Water Level 0
 Water Meter-Stop 485055
 Water Meter-Start _____
 Water Added 0
 Air Temp. 21.1
 Wind Direction W to E

Green X
 Green Brown _____
 Brown Green _____
 Brown _____

ODOR Slight

Common Bacterium-Per Drop _____
 Activated Sludge _____
 Glass Tube Test ✓

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Dan Selgent
 Inspected by

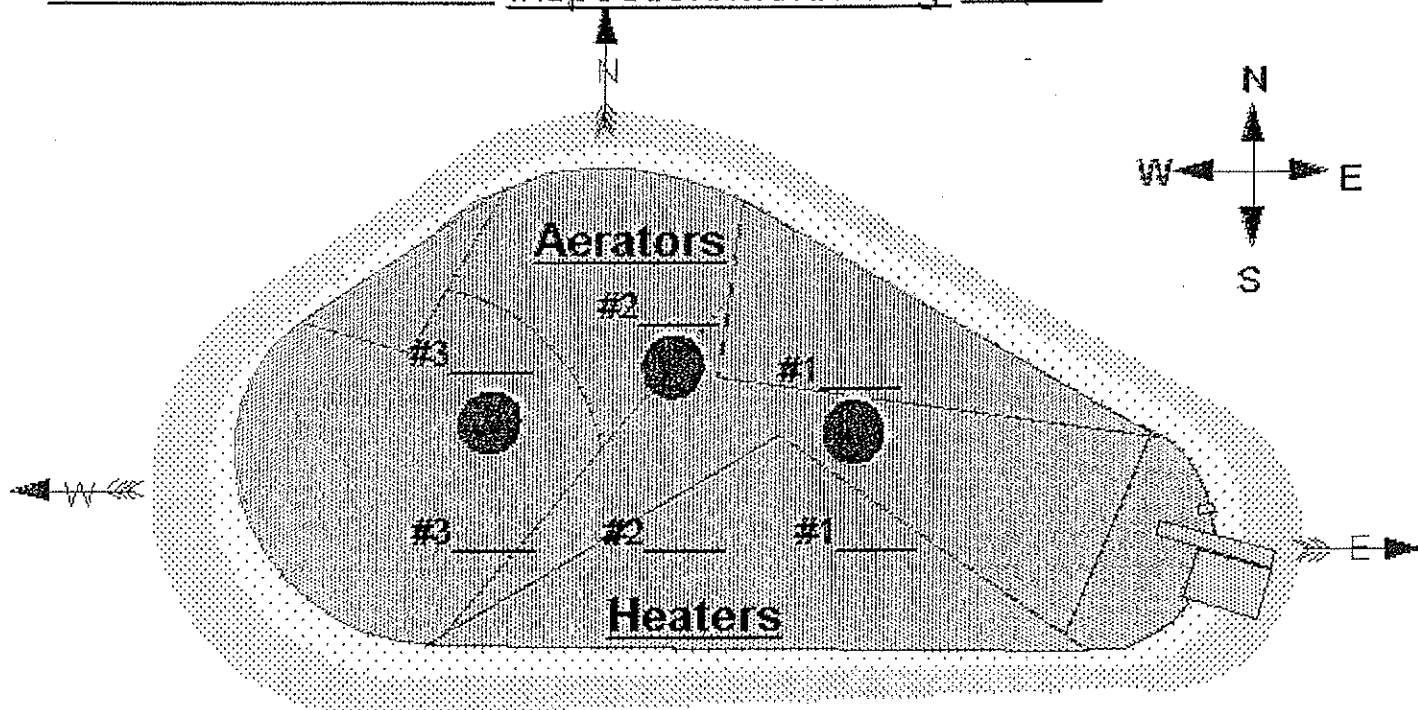
11-19-07
 Date

Dan Selgent
 Supervisor Review

11-19-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 19.4
 Oxygen 12
 pH 9.07
 Time 1300

East-

Water Temp 16.9
 Oxygen 8
 pH 8.92
 Time 1330

COLOR---

Green X
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ✓

Erosion Some

Animal Burrows Some

Weed Control Some

ODOR Slight

Percolation Pond

Water Level DRY

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by Dan Sullivan

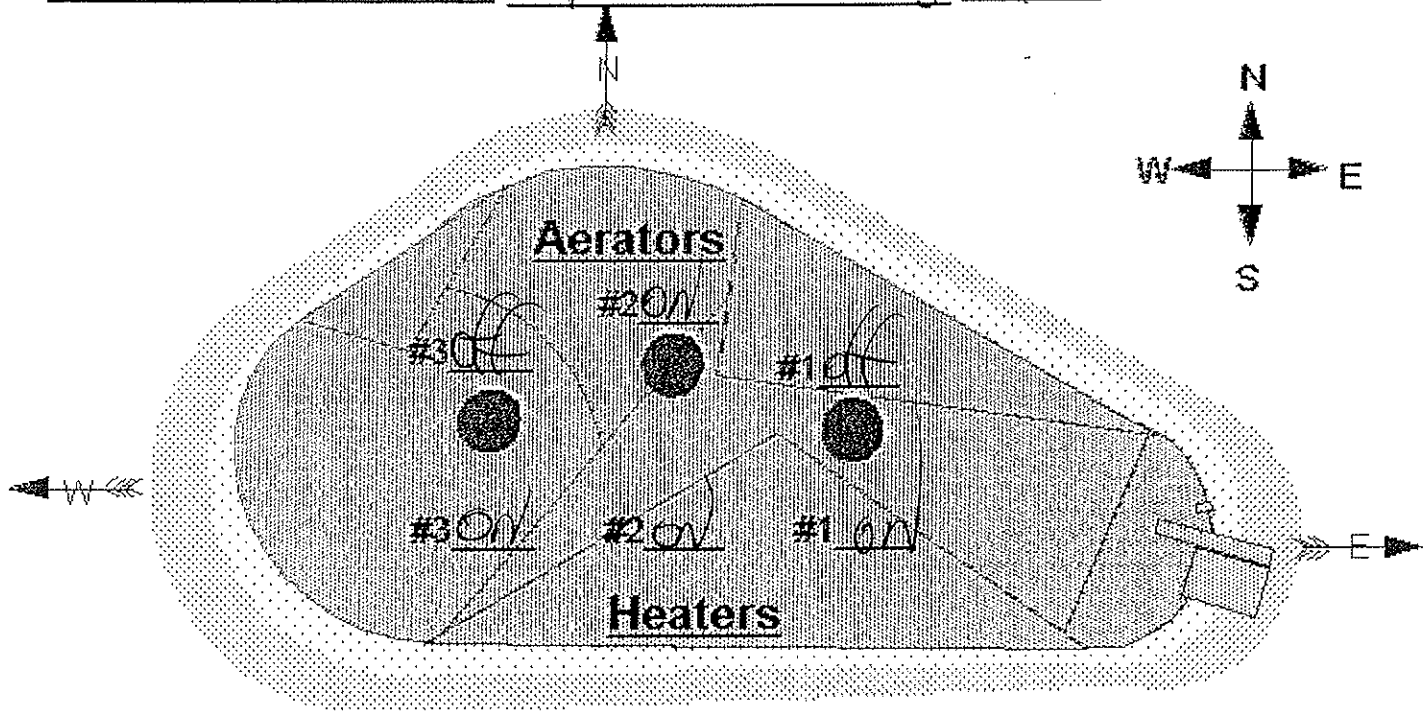
11-15-07
 Date

Supervisor Review Dan Sullivan

11-15-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 16.9
 Oxygen 12
 pH 9.00
 Time 1300

East-

Water Temp 15.5
 Oxygen 12
 pH 8.95
 Time 1330

COLOR---

Green X
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop
 Activated Sludge
 Glass Tube Test

ODOR Slight

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level 4.1
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by [Signature]

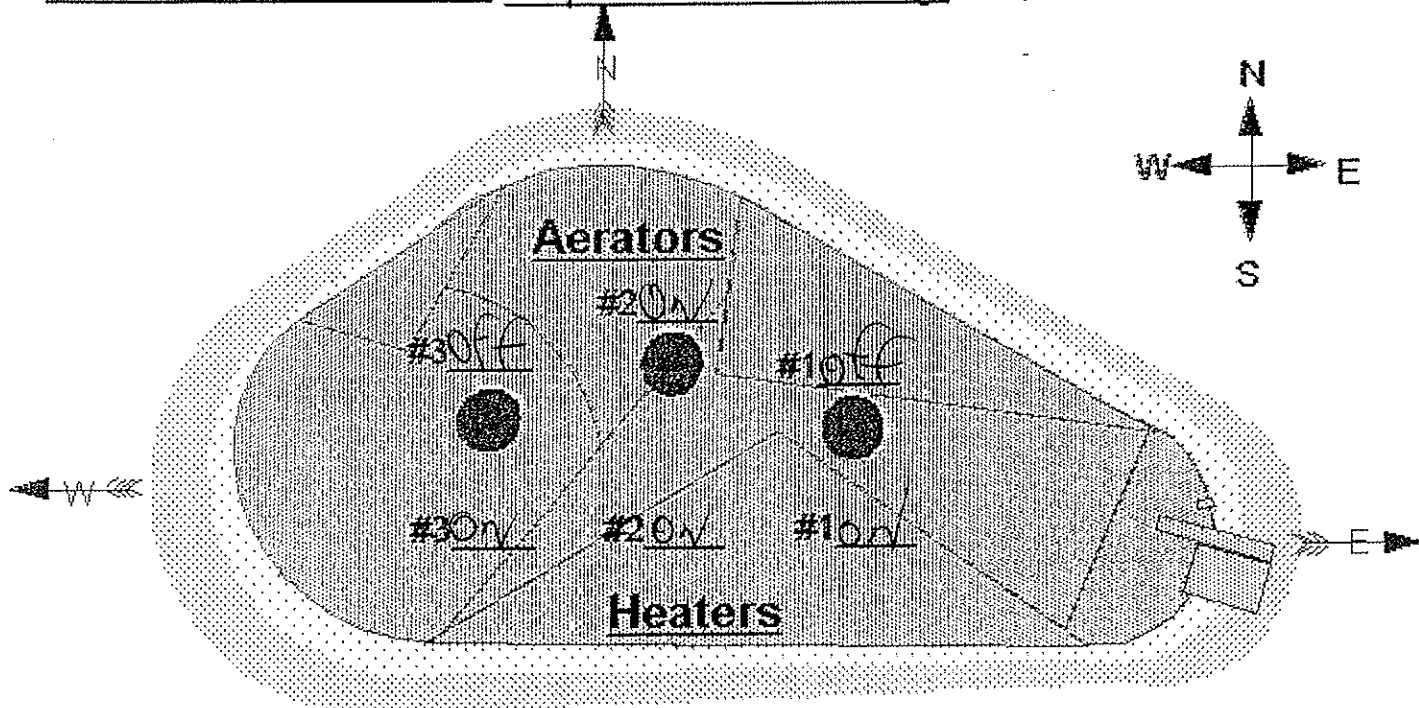
11-12-07
 Date

Supervisor Review [Signature]

11-12-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 15.9
 Oxygen 10
 pH 8.95
 Time 1300

East-

Water Temp 17.7
 Oxygen 10
 pH 8.96
 Time 1330

COLOR----

Green X
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop
 Activated Sludge
 Glass Tube Test

ODOR- Slight

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level 2.24
 Erosion Some
 Animal Burrows Some
 Weed Control Some

J. Dax Sergent
 Inspected by

11-8-07
 Date

J. Dax Sergent
 Supervisor Review

11-8-07
 Date

Comments

Water Temp 16.3
Oxygen 10
pH 9.06
Time 1300

Water Level - $\frac{1}{2}$

Water Meter-Stop 485053

Water Meter-Start

Water Added ②

Air Temp. 26.1

Wind Direction *E to W*

Green A
Green Brown
Brown Green
Brown

ODOR—Slight

Water Temp; 16.4
Oxygen 10
pH 9.00
Time 1330

Common Bacterium-Per Drop

Activated Sludge /

Glass Tube Test ✓

Erosion *Some*

Animal Burrows *Conk*

Weed Control Some

Water Level Up
Erosion Some
Animal Burrows Some
Weed Control Some

Inspected by

11-5-07
Date

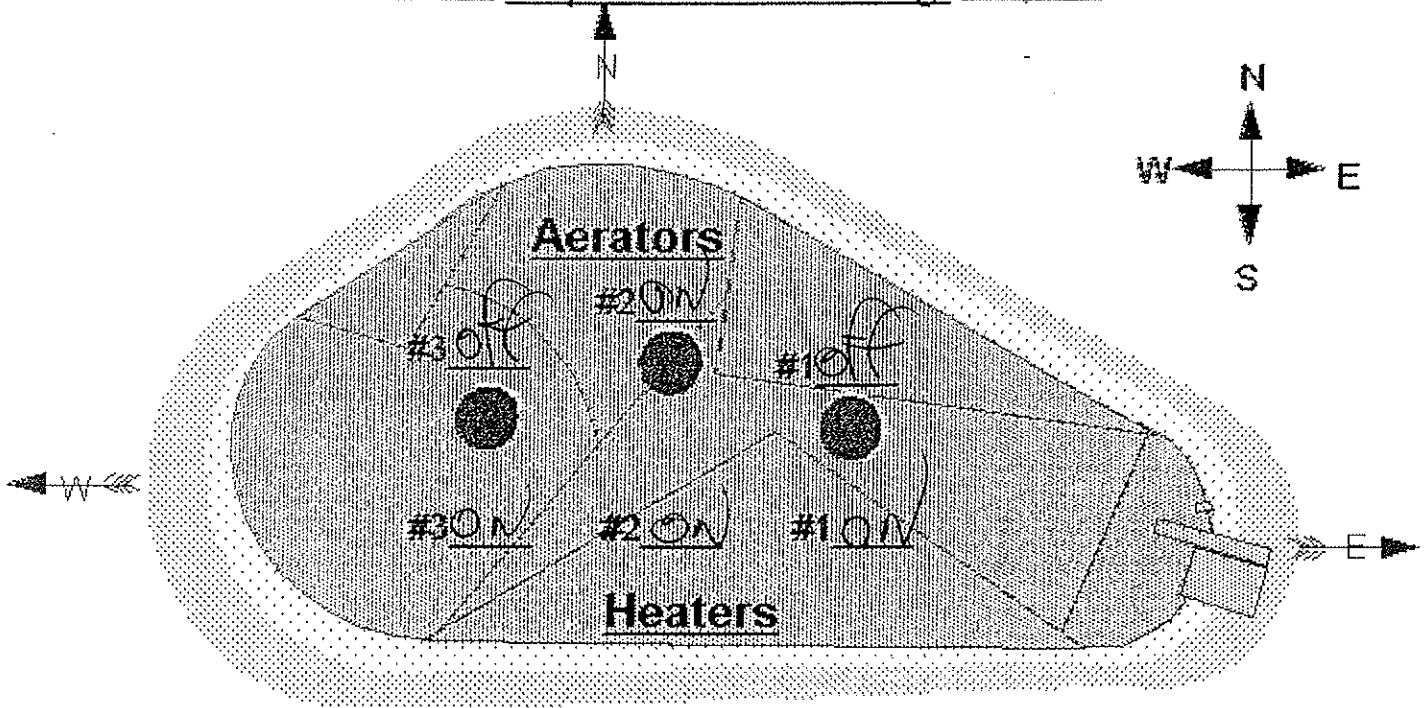
Supervisor Review

11.5.04

Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 21.2
 Oxygen 12
 pH 9.11
 Time 1600

Water Level -1/2

Water Meter-Stop 485033

Water Meter-Start

Water Added 0

Air Temp 23.9

Wind Direction W to E

COLOR—

Green ☒

Green Brown

Brown Green

Brown

ODOR—Slight

East-

Water Temp 21.3
 Oxygen 12
 pH 9.25
 Time 1630

Common Bacterium-Per Drop

Activated Sludge ☒

Glass Tube Test ☒

Erosion Some

Animal Burrows Some

Weed Control Some

Percolation Pond

Water Level DRY

Erosion Some

Animal Burrows Some

Weed Control Some

Inspected by Den Berger

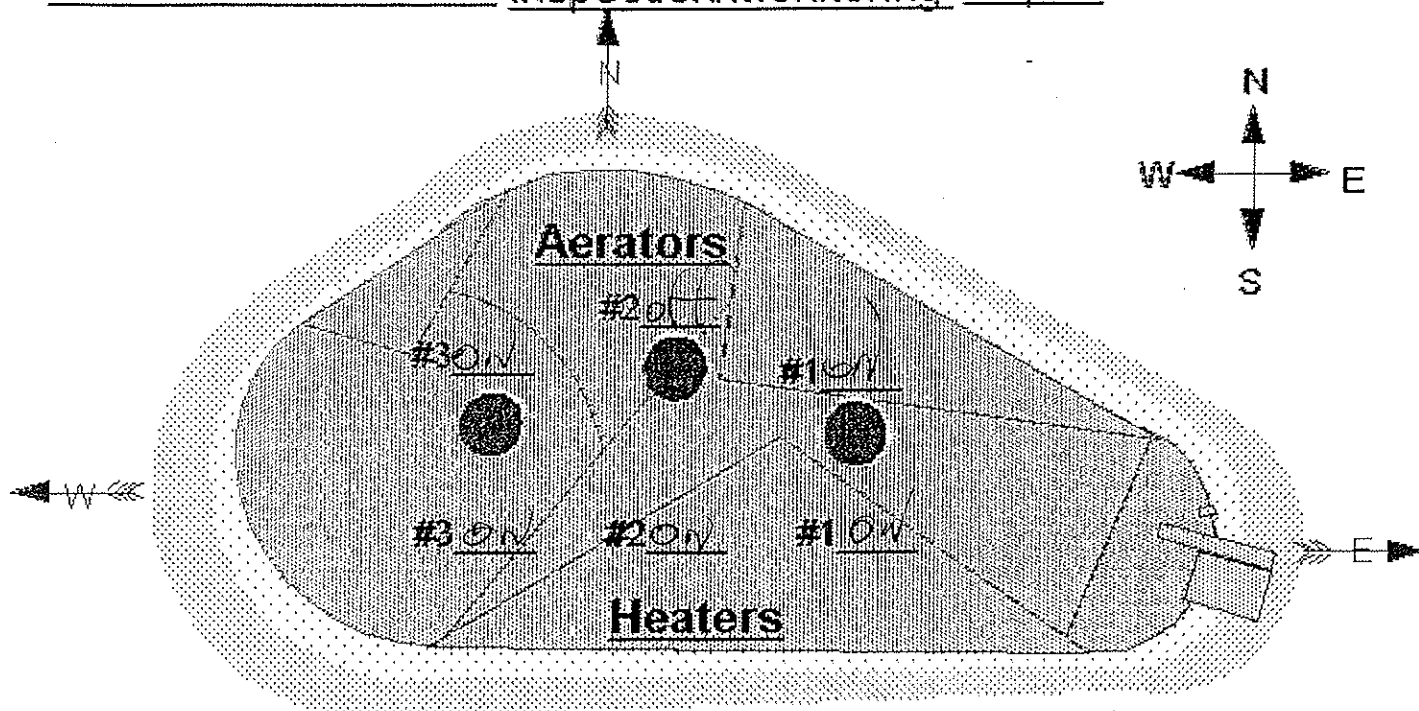
11-1-07
 Date

Supervisor Review Den Berger

11-1-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 21.0
 Oxygen 10
 pH 9.13
 Time 1400

Water Level -1
 Water Meter-Stop 485055
 Water Meter-Start

Water Added 0
 Air Temp. 23.9
 Wind Direction W to E

COLOR—

Green ☒
 Green Brown
 Brown Green
 Brown

ODOR—

East-

Water Temp 19.3
 Oxygen 10
 pH 9.01
 Time 1930

Common Bacterium-Per Drop
 Activated Sludge
 Glass Tube Test

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by Den Sargent

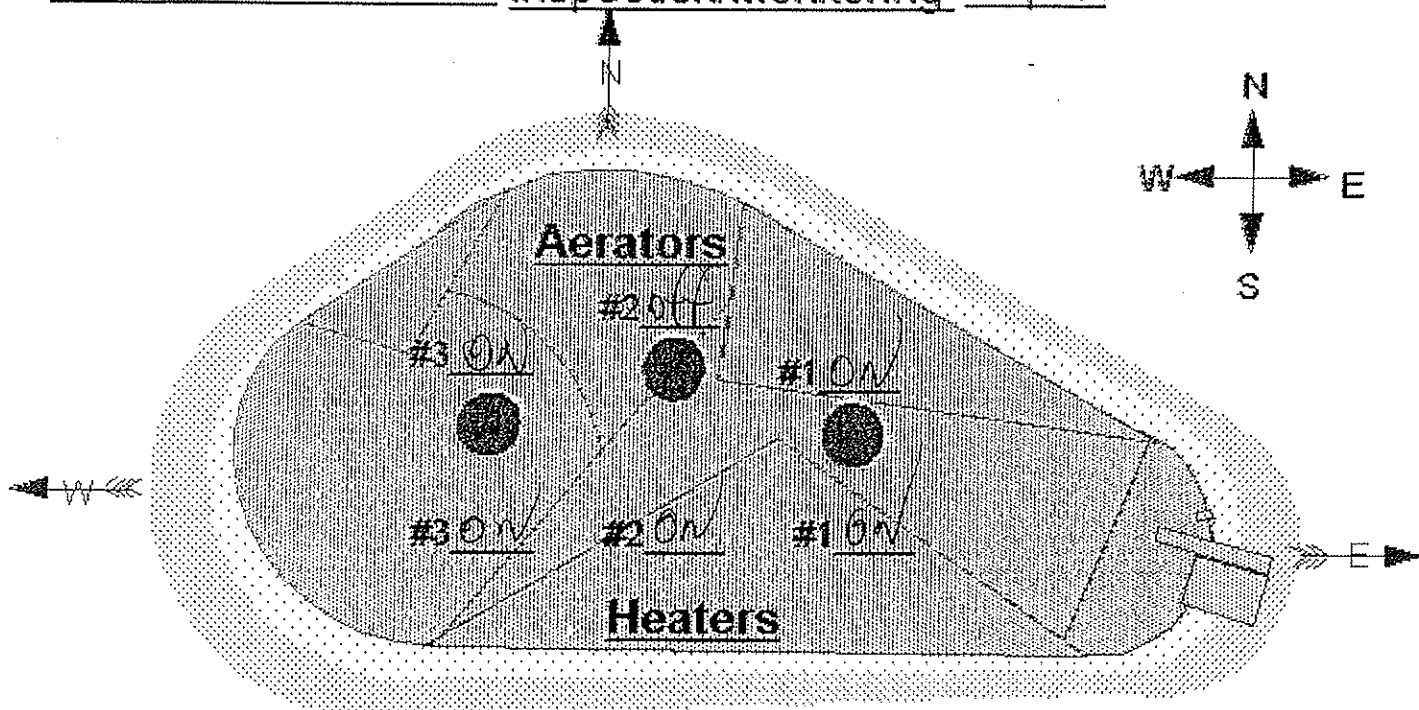
10-29-07
 Date

Supervisor Review Den Sargent

10-29-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 21.2
 Oxygen 10
 pH 9.01
 Time 1400

East-

Water Temp 18.1
 Oxygen 10
 pH 9.10
 Time 1430

COLOR---

Water Level -3
 Water Meter-Stop 9850855
 Water Meter-Start _____
 Water Added 0
 Air Temp. 26.7
 Wind Direction E to W

Green ☒
 Green Brown _____
 Brown Green _____
 Brown _____

Common Bacterium-Per Drop _____
 Activated Sludge _____
 Glass Tube Test ☒

ODOR---

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by Don Super

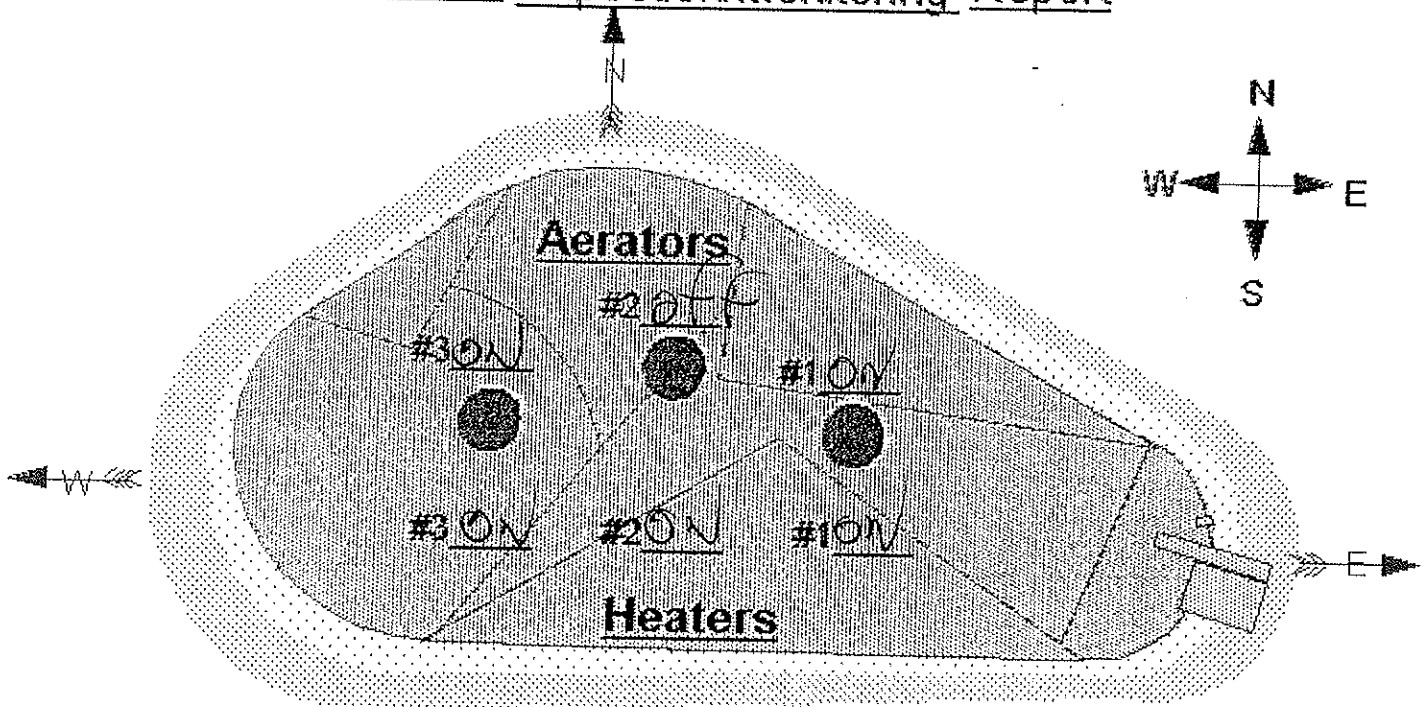
Date 10.25.07

Supervisor Review Don Super

Date 10/25.07

Comments _____

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 18.6
 Oxygen 10
 pH 9.16
 Time 14200

East-

Water Temp 16.5
 Oxygen 10
 pH 9.16
 Time 1400

COLOR—

Water Level -3
 Water Meter-Stop 9850855
 Water Meter-Start _____
 Water Added 0
 Air Temp. 25.0
 Wind Direction E to W

Green ☒
 Green Brown _____
 Brown Green _____
 Brown _____

ODOR—SLIGHT

Common Bacterium-Per Drop _____
 Activated Sludge _____
 Glass Tube Test ☒

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by Dem Sargen

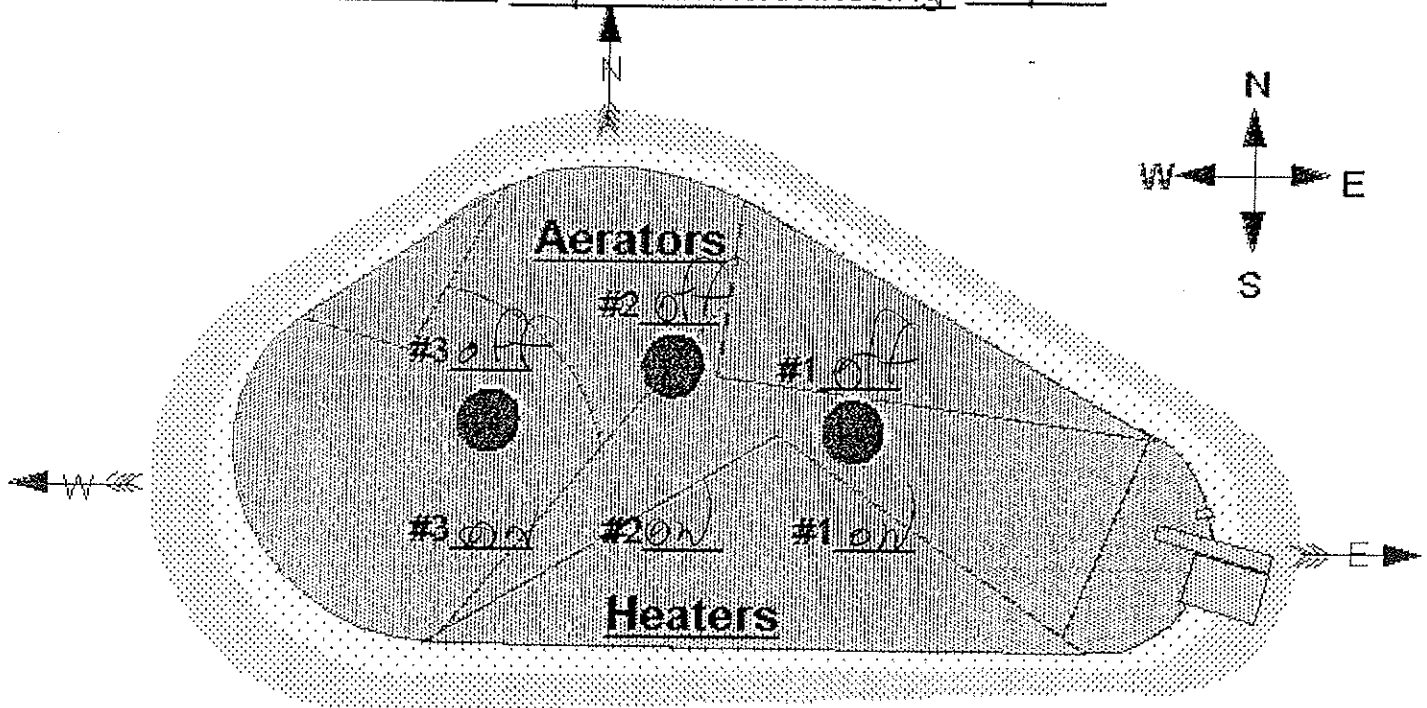
10.22.07
 Date

Supervisor Review Dem Sargen

10.22.07
 Date

Comments _____

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 19.7
 Oxygen 12
 pH 9.28
 Time 1300

East-

Water Temp 16.3
 Oxygen 8
 pH 7.81
 Time 1330

COLOR---

Green /
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop
 Activated Sludge /
 Glass Tube Test

Water Level 3
 Water Meter-Stop 4450855
 Water Meter-Start

Water Added 0
 Air Temp. 23.3
 Wind Direction E to W

ODOR Slight

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by J. A. Senger

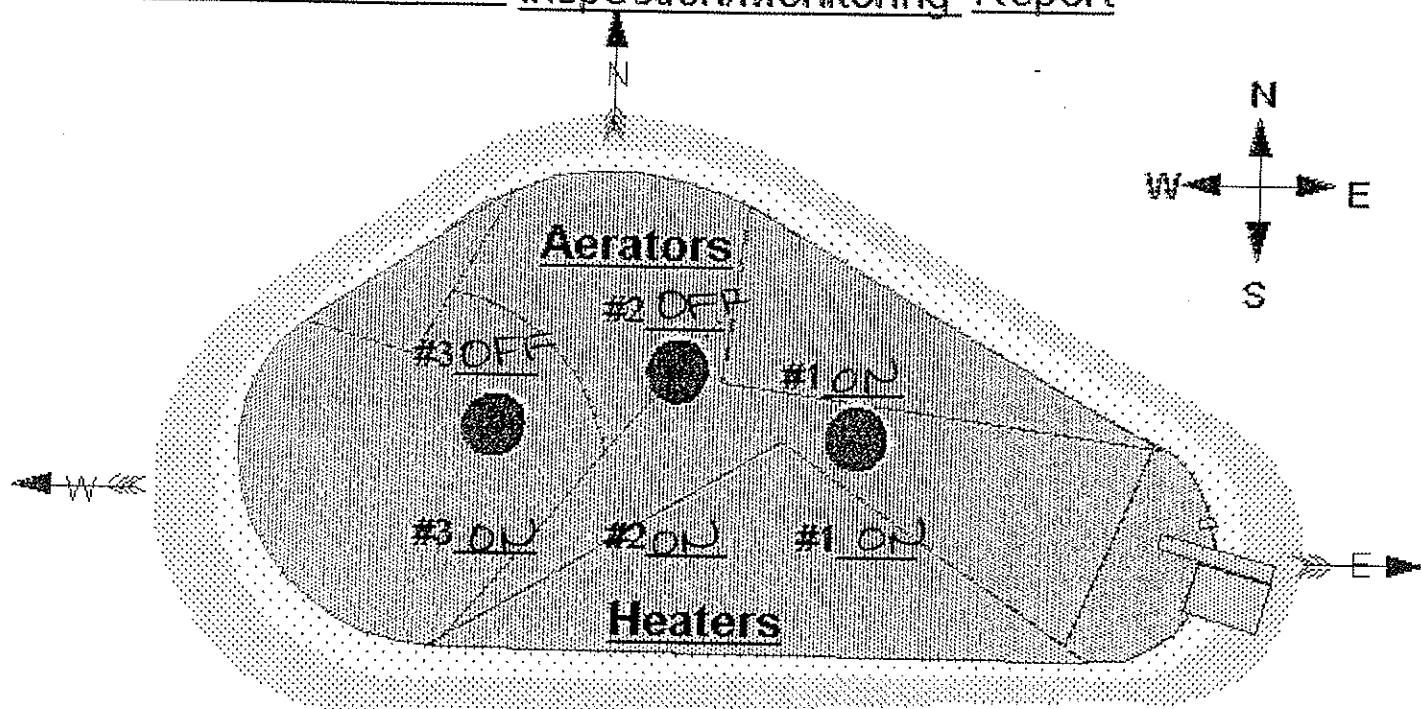
Date 10.18.07

Supervisor Review J. A. Senger

Date 10.18.07

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 19.6

Oxygen 10

pH

Time 1300

Water Level -3'4

Water Meter-Stop 4850855

Water Meter-Start 4850855

Water Added 0

Air Temp. 18.9

Wind Direction E TO W

COLOR—

Green ☒

Green Brown

Brown Green

Brown

ODOR—

East-

Water Temp 15.8

Oxygen 10

pH

Time 1330

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ☒

Erosion SOME

Animal Burrows SOME

Weed Control SOME

Percolation Pond

Water Level DRY

Erosion SOME

Animal Burrows SOME

Weed Control SOME

KEVIN BROWN
Inspected by

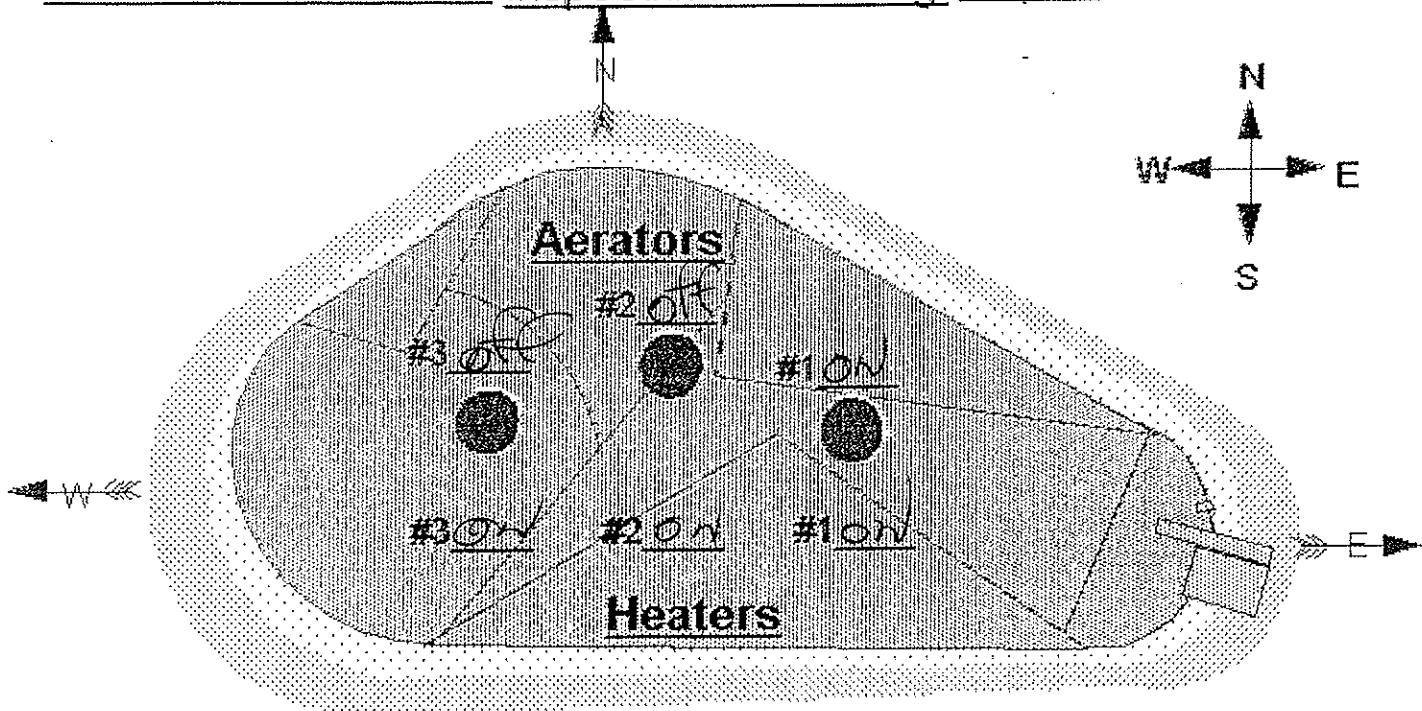
10/16/07
Date

DAVE HANCOCK
Supervisor Review

10-16-07
Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 18.5
 Oxygen 10
 pH 9.28
 Time 1300

East-

Water Temp 19.2
 Oxygen 12
 pH 9.35
 Time 1330

COLOR---

Water Level -3
 Water Meter-Stop 4850 855
 Water Meter-Start

Green ☒
 Green Brown
 Brown Green
 Brown

Common Bacterium-Per Drop
 Activated Sludge
 Glass Tube Test ☒

Water Added 0
 Air Temp. 22.2
 Wind Direction W to E

ODOR 1 Slight

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by [Signature]

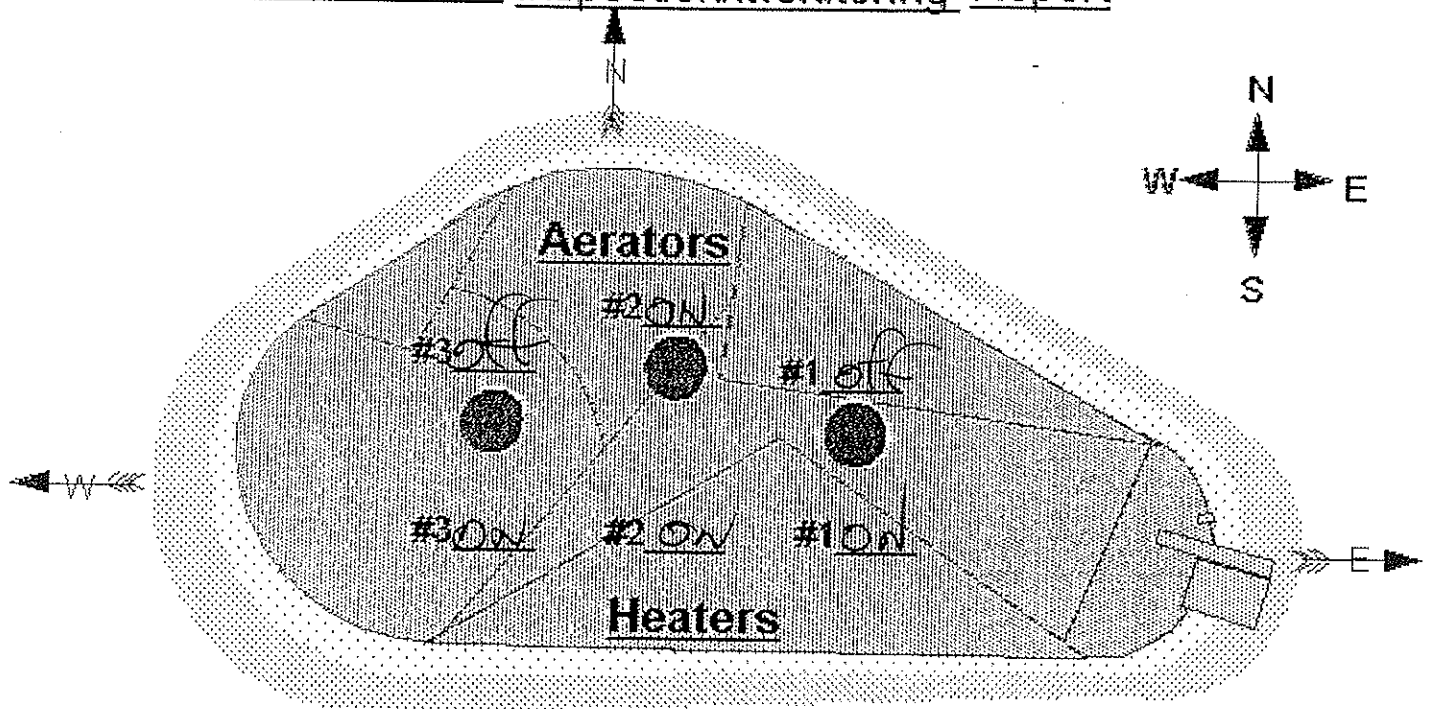
10-15-07
 Date

Supervisor Review [Signature]

10-15-07
 Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 21.0

Oxygen 10

pH 9.24

Time 1300

Water Level -3 1/2

Water Meter-Stop 4850855

Water Meter-Start

Water Added 0

Air Temp. 22.2

Wind Direction E to W

East-

Water Temp 18.8

Oxygen 12

pH 9.18

Time 1330

COLOR—

Green ☒

Green Brown

Brown Green

Brown

Common Bacterium-Per Drop

Activated Sludge

Glass Tube Test ☒

Erosion Some

Animal Burrows Some

Weed Control Some

ODOR—Slight

Percolation Pond

Water Level Dry

Erosion Some

Animal Burrows Some

Weed Control Some

Dan Sargent
Inspected by

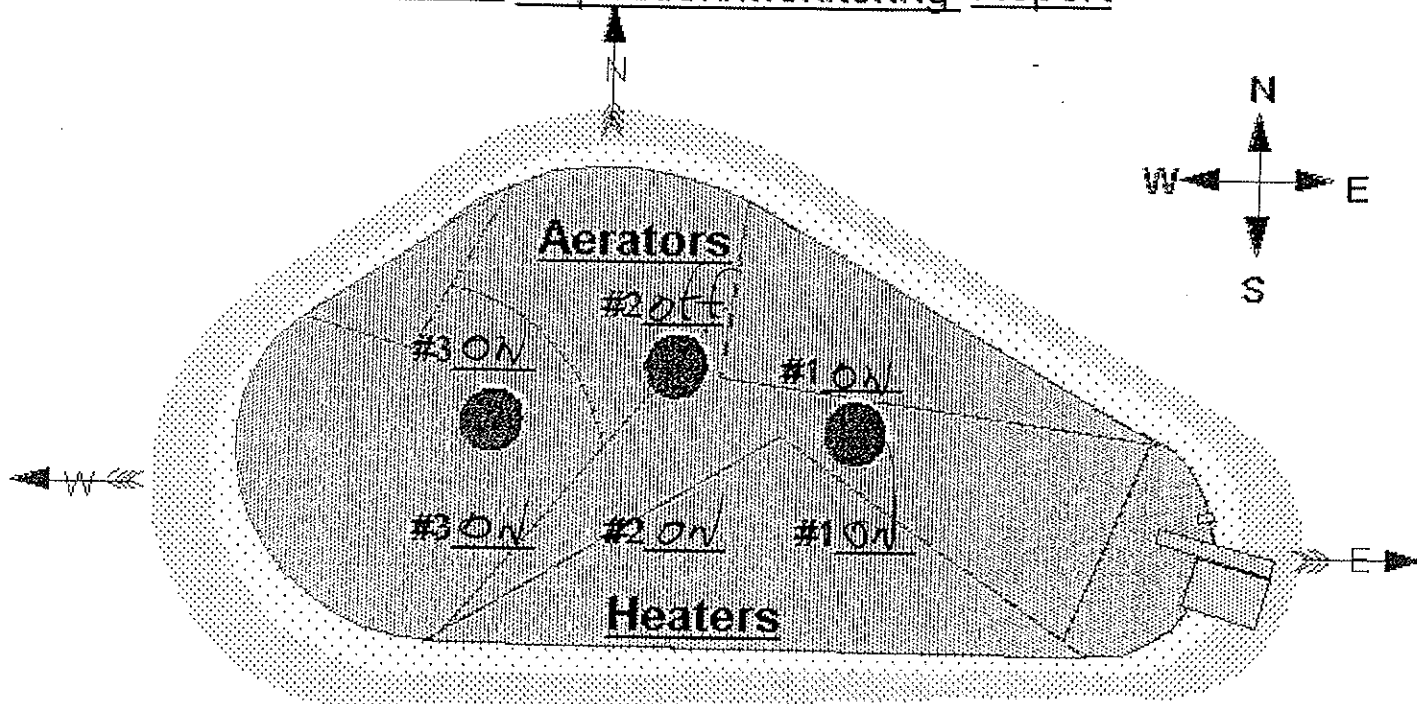
10-11-07
Date

Dan Sargent
Supervisor Review

10-11-07
Date

Comments

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 19.2
Oxygen 12
pH 9.28
Time 1300

East-

Water Temp 18.1
Oxygen 12
pH 9.24
Time 1330

COLOR---

Water Level 3 1/2
Water Meter-Stop 4850855
Water Meter-Start _____

Green ☒
Green Brown _____
Brown Green _____
Brown _____

Common Bacterium-Per Drop _____
Activated Sludge _____
Glass Tube Test ☒

Water Added 0
Air Temp. 24.4
Wind Direction E to W

ODOR Light

Erosion Some
Animal Burrows Some
Weed Control Some

Percolation Pond

Water Level DRY
Erosion Some
Animal Burrows Some
Weed Control Some

Inspected by Dan Sargent

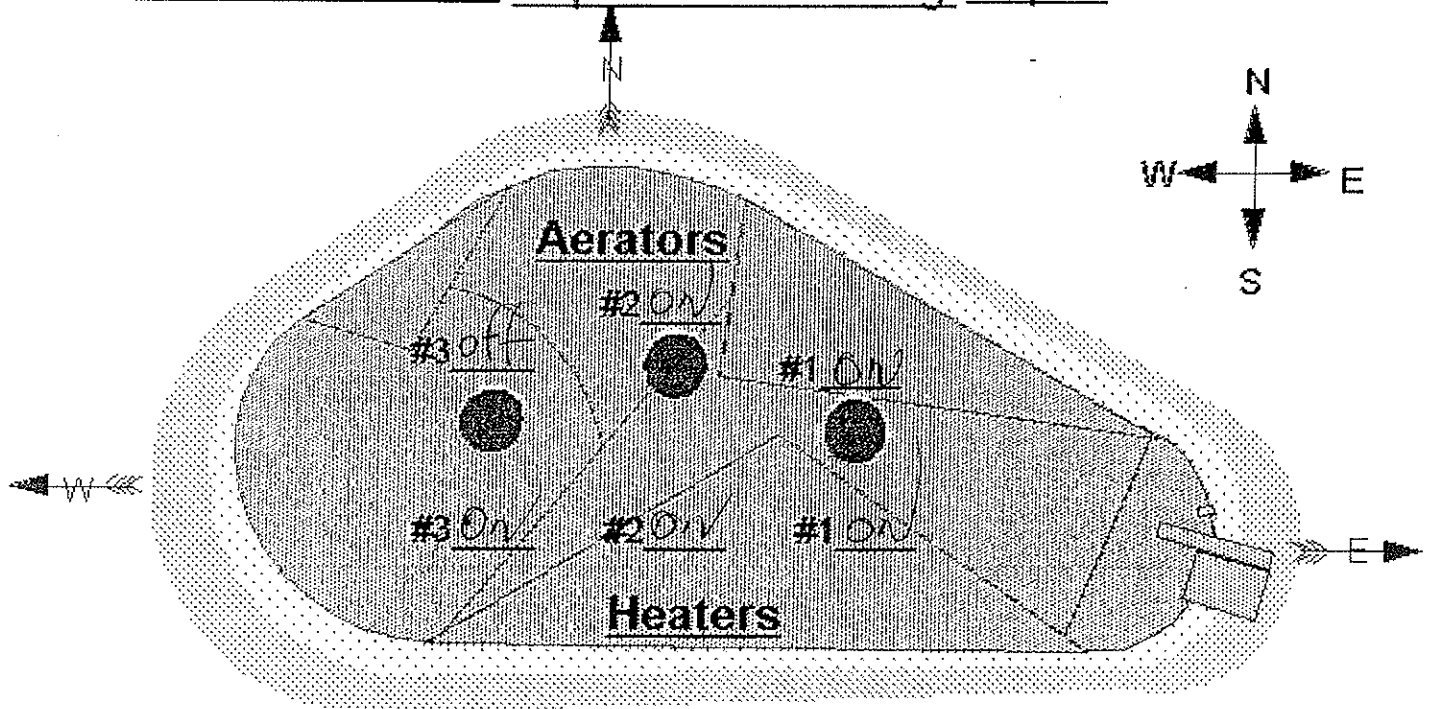
10.8.07
Date

Supervisor Review Dan Sargent

10.8.07
Date

Comments _____

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 17.5
 Oxygen 10
 pH 9.38
 Time 1300

East-

Water Temp 18.6
 Oxygen 12
 pH 9.35
 Time 1330

COLOR---

Water Level -3
 Water Meter-Stop 485855
 Water Meter-Start _____

Green ☒
 Green Brown _____
 Brown Green _____
 Brown _____

Common Bacterium-Per Drop _____

Activated Sludge _____
 Glass Tube Test ☒

Water Added 4977
 Air Temp. 21.1
 Wind Direction W to E

ODOR Light

Erosion Some
 Animal Burrows Some
 Weed Control Some

Percolation Pond

Water Level DRY
 Erosion Some
 Animal Burrows Some
 Weed Control Some

Inspected by Den S. [Signature]

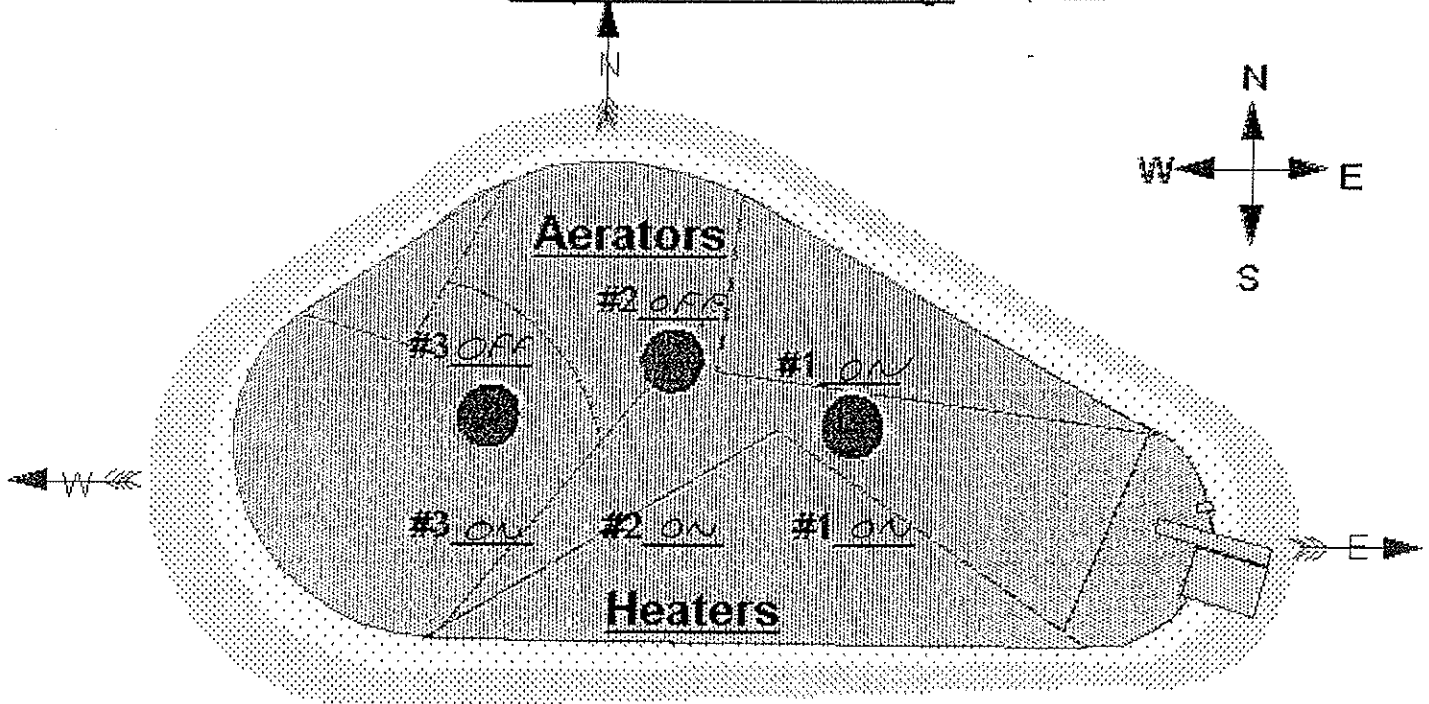
Date 10/4/07

Supervisor Review Den S. [Signature]

Date 10-4-07

Comments _____

Site 300 Sewer Pond- Inspection/Monitoring Report



West-

Water Temp 18.5
 Oxygen 10
 pH 9.66
 Time 1330

East-

Water Temp 19.9
 Oxygen 12
 pH 9.77
 Time 1400

COLOR---

Green ☒
 Green Brown _____
 Brown Green _____
 Brown _____

Common Bacterium-Per Drop _____

Activated Sludge _____

Glass Tube Test ☒

Erosion SOME

Animal Burrows SOME

Weed Control SOME

ODOR---1 SLIGHT

Percolation Pond

Water Level- DRY

Erosion SOME

Animal Burrows SOME

Weed Control SOME

Donna Lantz

10-1-07

Inspected by

Date

Donna Lantz
 Supervisor Review

10-1-07

Date

Comments

Appendix B

Specifications of Sewage Ponds Monitor Wells

Appendix B. Summary of sewage pond well specifications.

Well	HSU	Easting	Northing	Ground Surface Elevation	Measuring Point Elevation	Screen Top Elevation	Screen Bottom Elevation	Bentonite Top Elevation	Filter pack Top Elevation	Well Bottom Elevation
W-7E	Tnbs ₁	1,711,708	414,581	506.70	509.28	447.90	428.70	453.70	451.70	428.70
W-7ES	Qal- Tnbs ₁	1,711,719	414,586	506.41	509.71	491.41	481.41	496.41	495.41	479.61
W-7PS	Qal- Tnbs ₁	1,711,773	414,782	506.10	508.78	489.60	486.60	494.10	492.10	486.60
W-35A-04	Qal- Tnbs ₁	1,712,036	414,642	504.07	503.98	485.07	475.07	494.87	486.27	475.07
W-26R-01	Qal- Tnbs ₁	1,712,267	415,036	506.74	509.71	486.94	481.94	494.24	490.74	476.94
W-26R-11	Qal- Tnbs ₁	1,712,198	414,961	504.07	503.98	485.07	475.07	494.87	486.27	475.07
W-26R-05	Qal- Tnbs ₁	1,712,339	415,070	504.07	503.98	485.07	475.07	494.87	486.27	475.07
W-25N-20	Qal- Tnbs ₁	1,712,371	414,923	504.07	503.98	485.07	475.07	494.87	486.27	475.07
W-7DS	Qal- Tnbs ₁	1,712,206	414,880	504.07	503.98	485.07	475.07	494.87	486.27	475.07

Note: All measurements are made in feet; elevations are in feet above mean sea level.

HSU = Hydrostratigraphic unit.

Appendix C

Fourth Quarter Field Logs

Wastewater Monitoring

Sewage Ponds

FIELD TRACKING FORM

EAST END OF SITE 300 SEWAGE POND

DATE: 11/28/07

TIME: 1400

Lab	FGL
CoC #	41345
Ship It #	

Special Instructions: Quarterly Sampling (in 2nd Month)

Samples must be taken after 1 p.m.

Print collection time on sample bottles.

DO/conductivity/pH hold time 24 hr.

pH meter calibrated ☒

Conductivity meter calibrated ☒

DO meter calibrated ☒

Location	Field Measurements					Samples for Lab Analysis	
	pH	COND	Depth	DO (PPM)	Temp (°C)	Comments	Initials
3-ESWP-01-OW (East end of Sewage Pond)	8.29	6.76 m/s	1' 0.99	8.99	13.1	Thick + clumpy	KB, cf
3-WSWP-01-OW duplicate of 3-ESWP-01-OW							
						Analytical Codes:	
						E360.1 (DO) (1X500-mL glass, NO head space)	
						E120.1A & E150.1A (Conductivity/pH) (1 X 250-mL poly)	

1Q2007 Duplicate E360.1
3Q2007 Duplicate E120.1A & E150.1A
1Q2008 Duplicate E360.1

☒ Copy to Analyst, Maureen Ridley.

☒ Copy of CoC given to TRR

Revised 06/27/07

FIELD TRACKING FORM

INFLUENT TO SITE 300 SEWAGE POND

DATE: 11/28/07 TIME: 1330

Lab	COC #
Lab	FGL
CoC #	41345
Ship It #	

Special Instructions: Quarterly Sampling (in 2nd Month)
 Samples should be taken after 1 p.m. during higher flow.
 Print collection time on sample bottles.
 BOD Hold Time 48hr. Conductivity/pH Hold Time 24hr.

pH meter calibrated ☒
 Conductivity meter calibrated ☒
 DO meter calibrated ☒

Location	Field Measurements				Comments	Initials	Samples for Lab Analysis
	pH	COND	DO (PPM)	Temp (°C)			
3-ISWP-01-OW (Influent to Sewage Pond)	7.46	201 mg	0.00	17.4°		KBC	E120.1A & E150.1A (Conductivity/pH) (1 X 250-mL poly)
3-WSWP-01-OW duplicate of 3-ISWP-01-OW	8.24	201 mg	0.00	13.1		KS	SM5210B-A (BOD) (1 X 500-mL poly)

2Q2007 Duplicate E120.1A & E150.1A
 4Q2007 Duplicate SM5210B-A

☒ Copy to Analyst, Maureen Ridley

☒ Copy of CoC given to TRR

Appendix D

Annual Summary Plots and Tables of Sewage Evaporation and Percolation Ponds Wastewater Monitoring Data

Appendix D

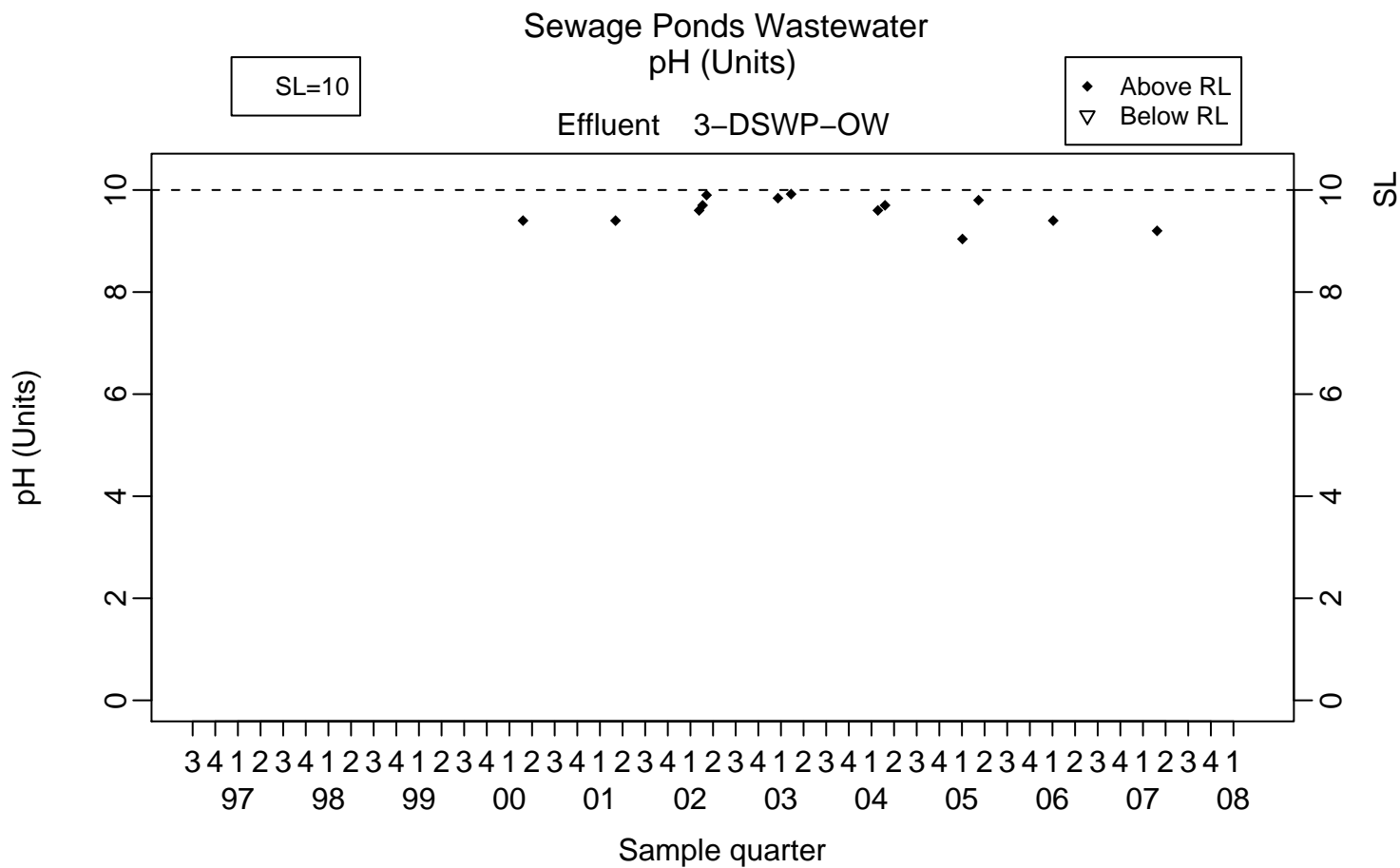
This appendix contains graphical and tabular summaries of the sewage evaporation and percolation ponds wastewater monitoring data. The monitoring requirements of WDR 96-248 began in the fourth quarter of 1996. Monitoring data at the sewage ponds from samples collected and analyzed on a routine basis since that time are plotted; the tabular summary includes only data from samples collected in 2007.

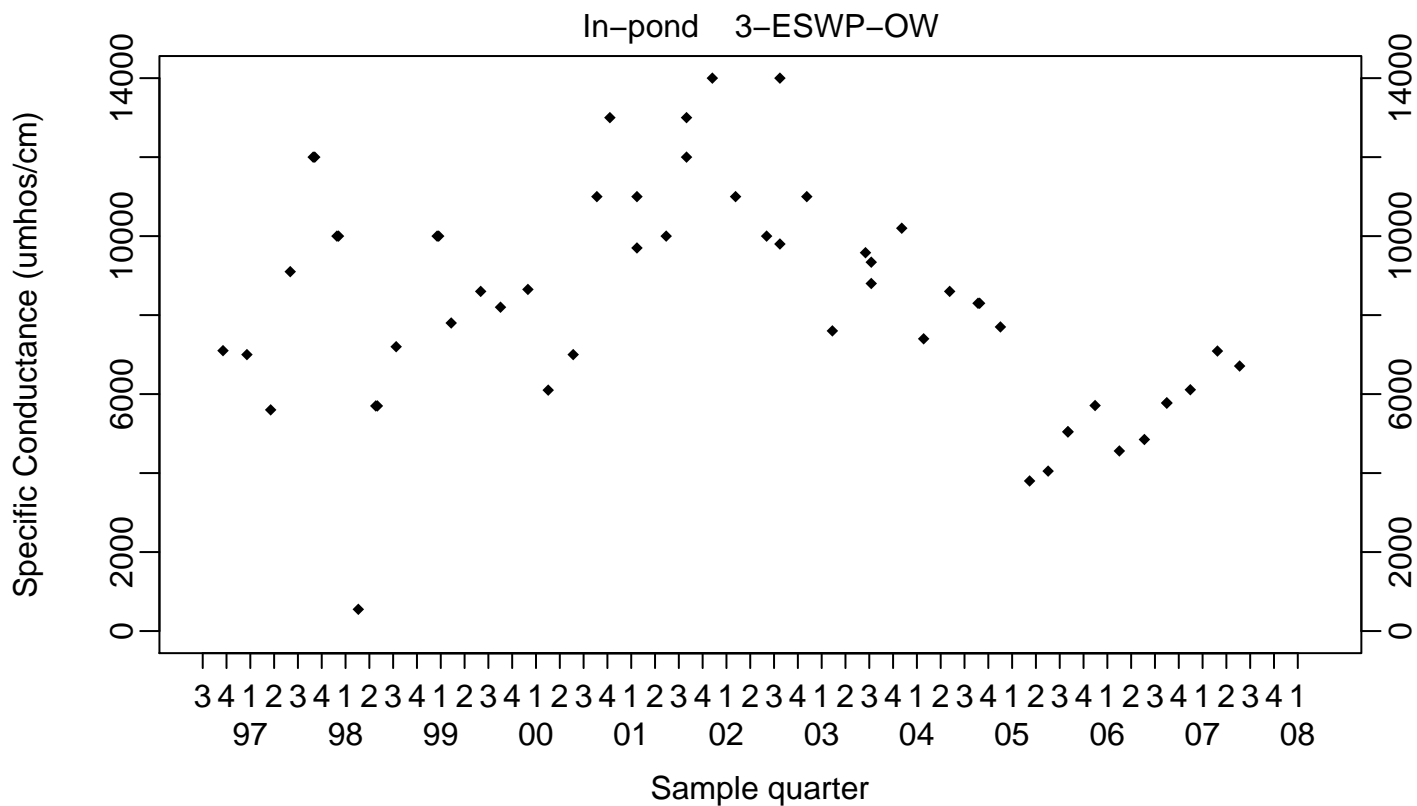
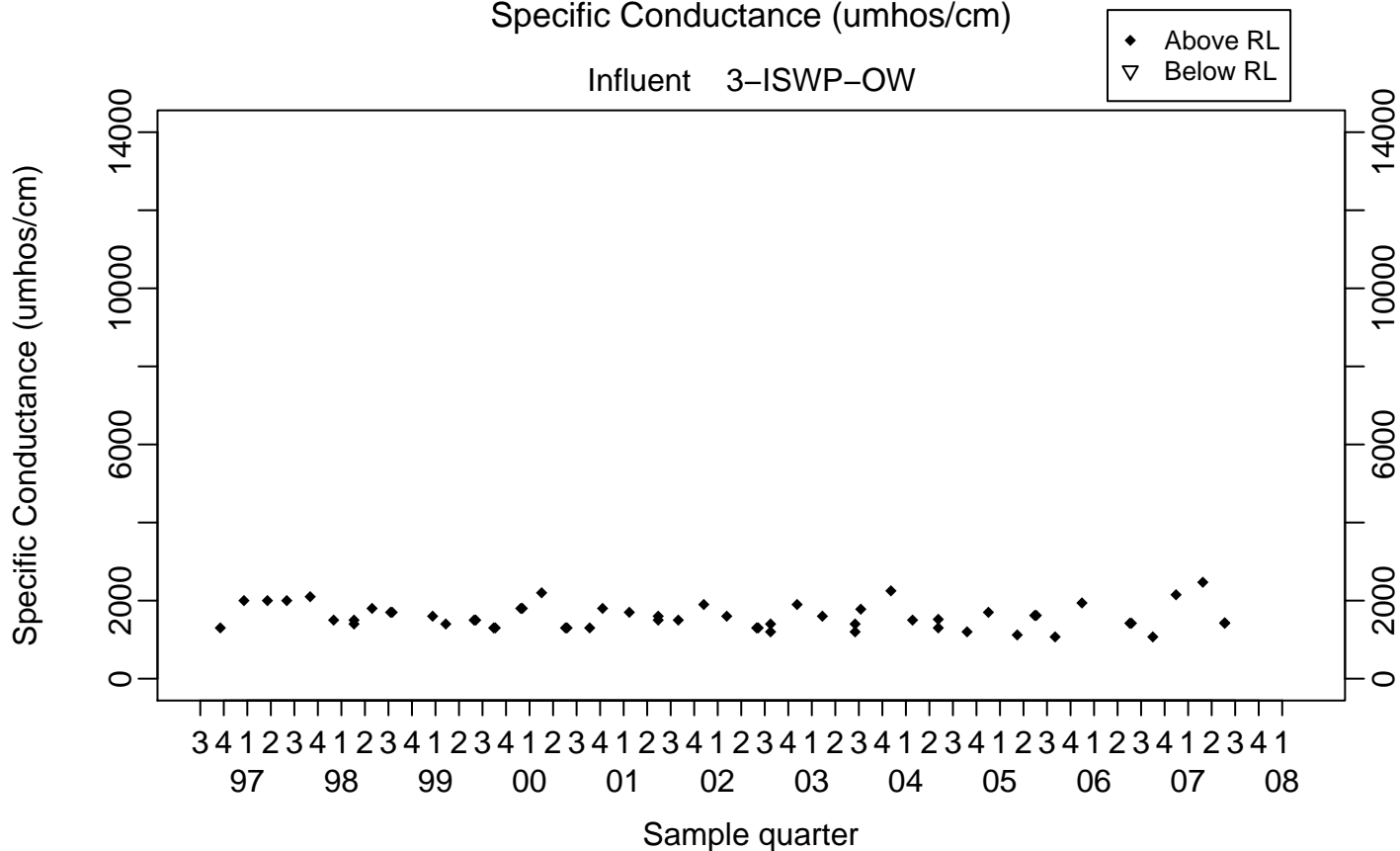
Wastewater influent monitoring at location ISWP consists of pH, specific conductance (SC), and biochemical oxygen demand (BOD). Routine wastewater monitoring at location ESWP consists of pH, EC, and dissolved oxygen (DO). A continuous discharge from the sewage evaporation pond into the percolation pond at location DSWP began at the end of February and continued through March 12, 2007. A sample of the discharge was collected on February 27, 2007, and analyzed for pH, SC, BOD, nitrogen-bearing nutrients including nitrate, and fecal and total coliform bacteria.

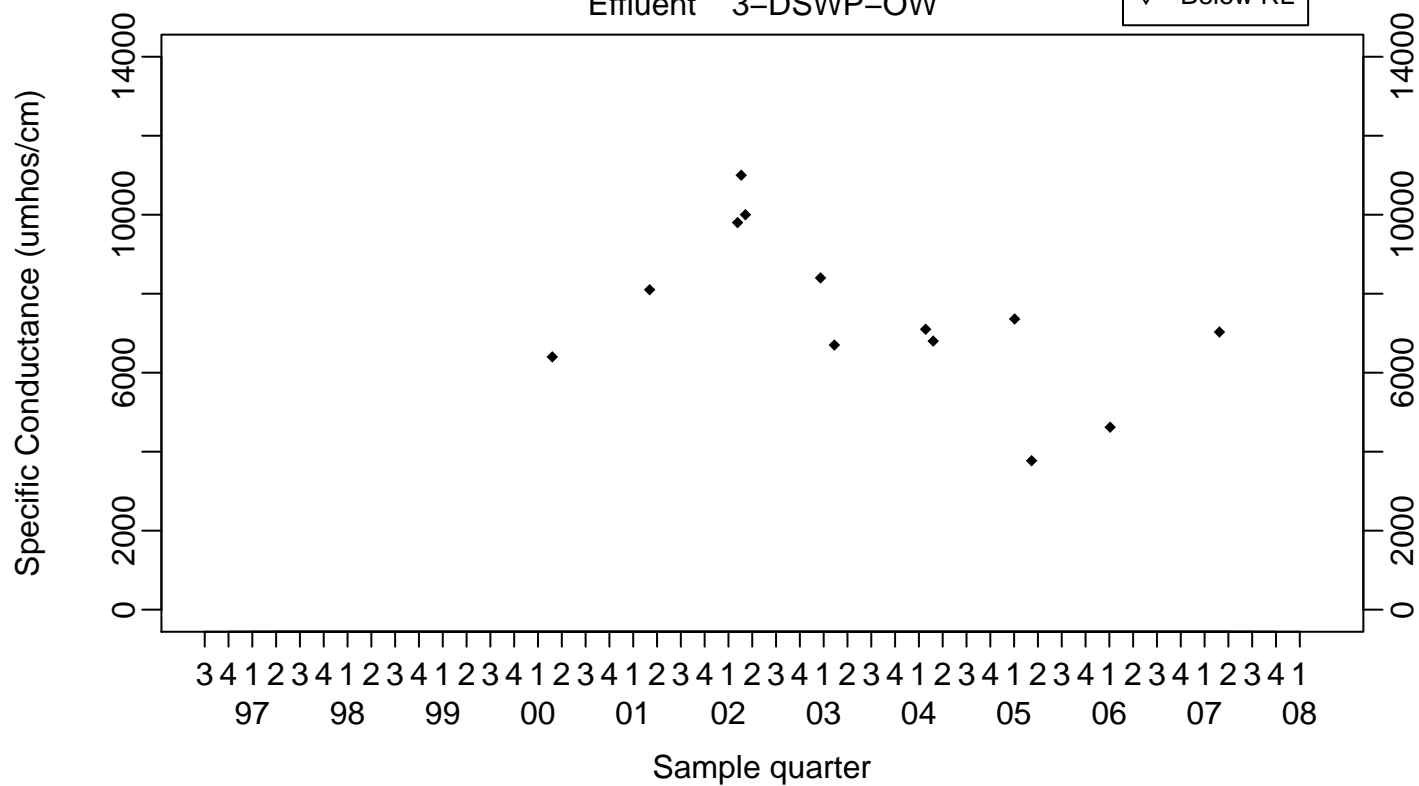
Each two-dimensional graph plots concentration on the vertical axis versus time (years divided into four quarterly sampling periods) on the horizontal axis. Units of measure are given on the vertical axis label and in the header at the top of each page. Values above the analytical reporting limit for each analyte are plotted as solid diamonds, and values below the analytical reporting limit are plotted as open inverted triangles. Data determined not to be valid are not plotted.

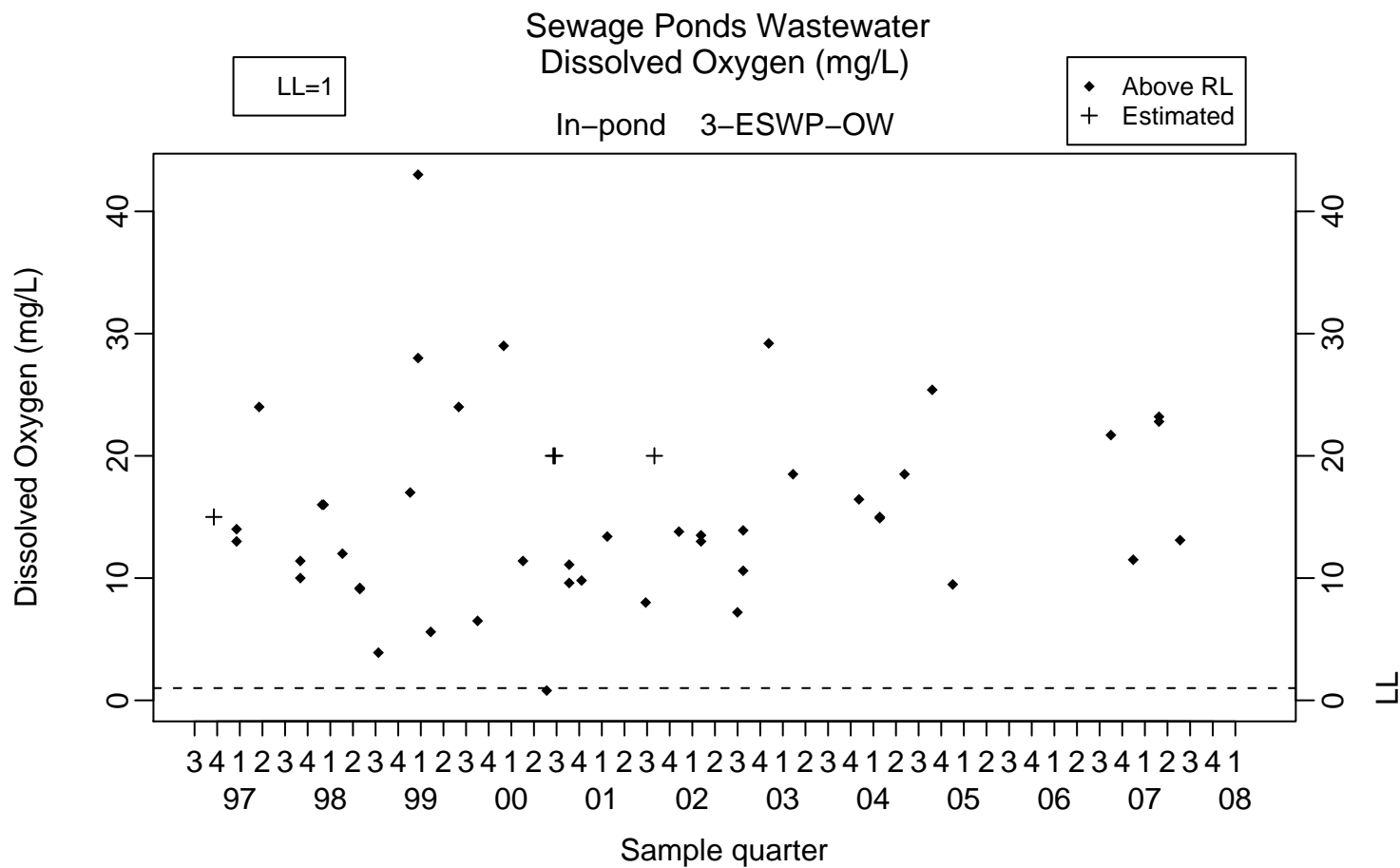
Tabular summaries of the observations are contained in **Tables D-1 to D-4**, starting on page D-17.

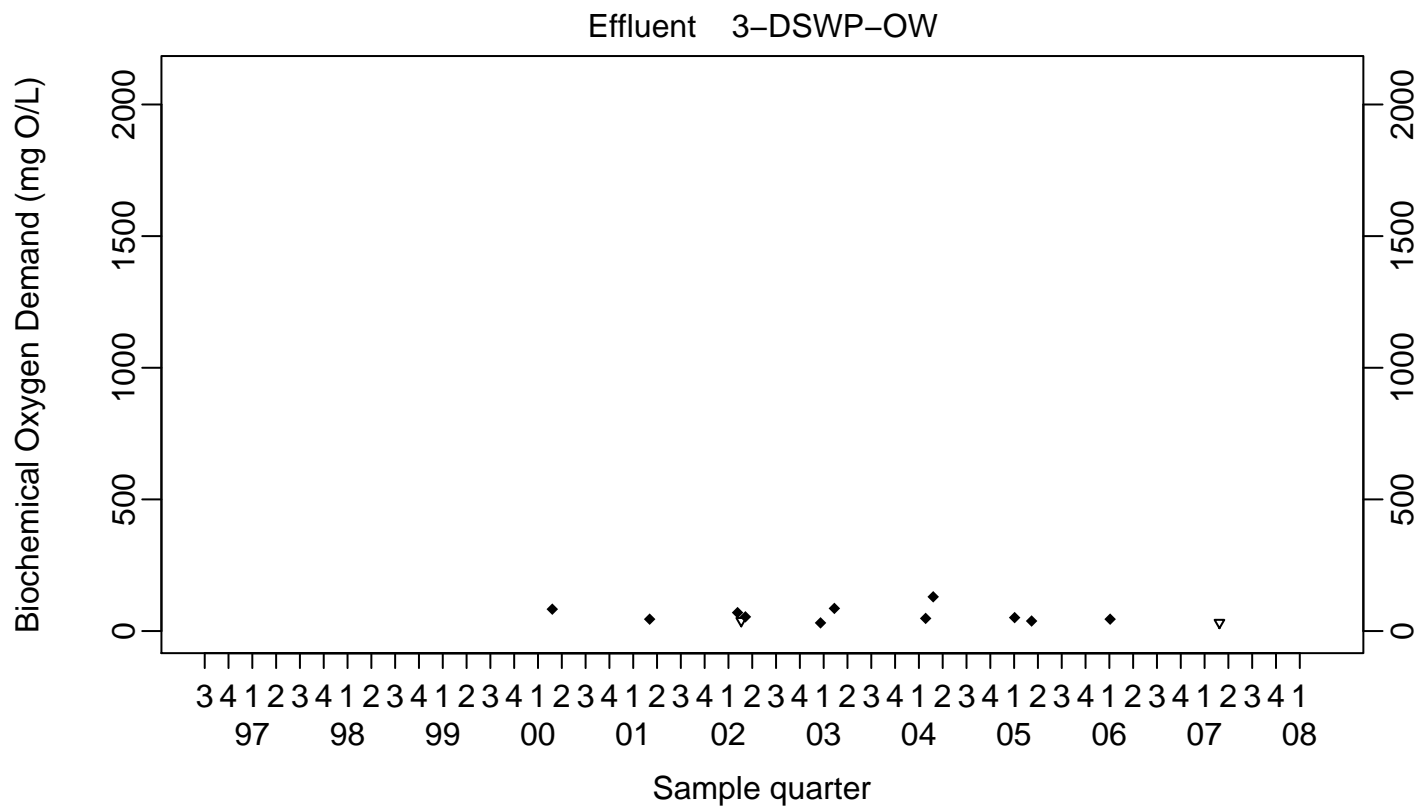
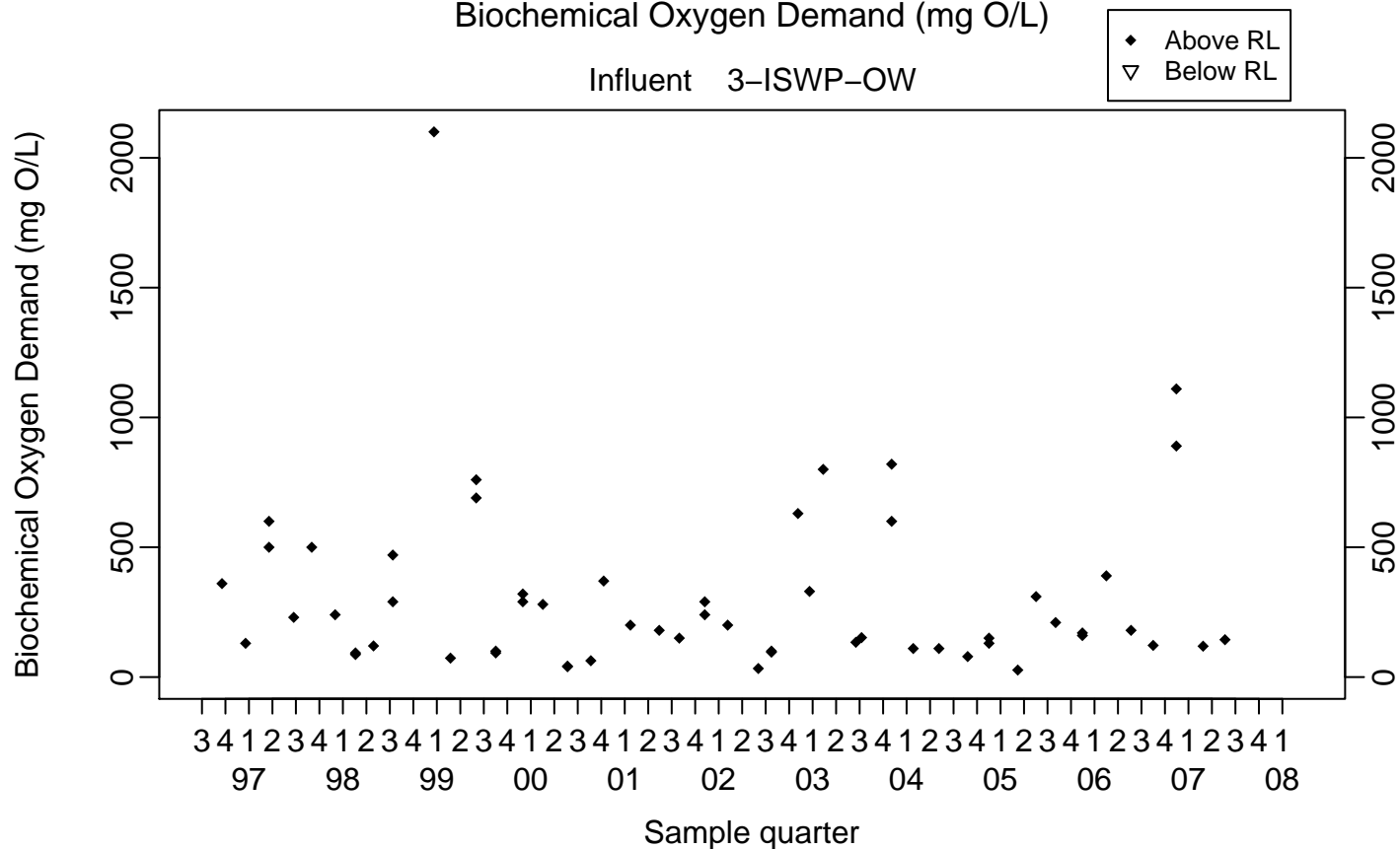
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Sewage Ponds Wastewater
Specific Conductance (umhos/cm)

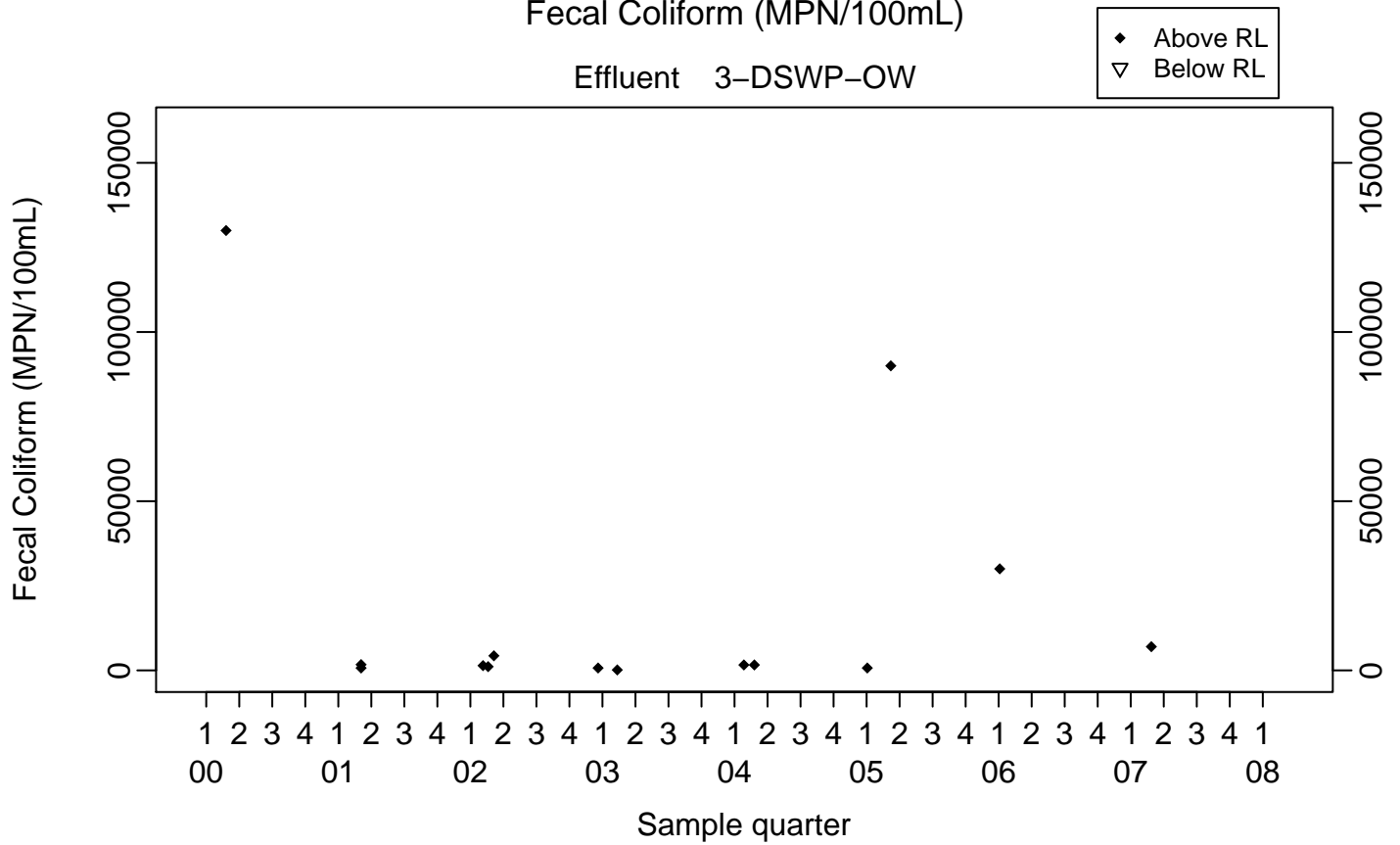




Sewage Ponds Wastewater
Biochemical Oxygen Demand (mg O/L)

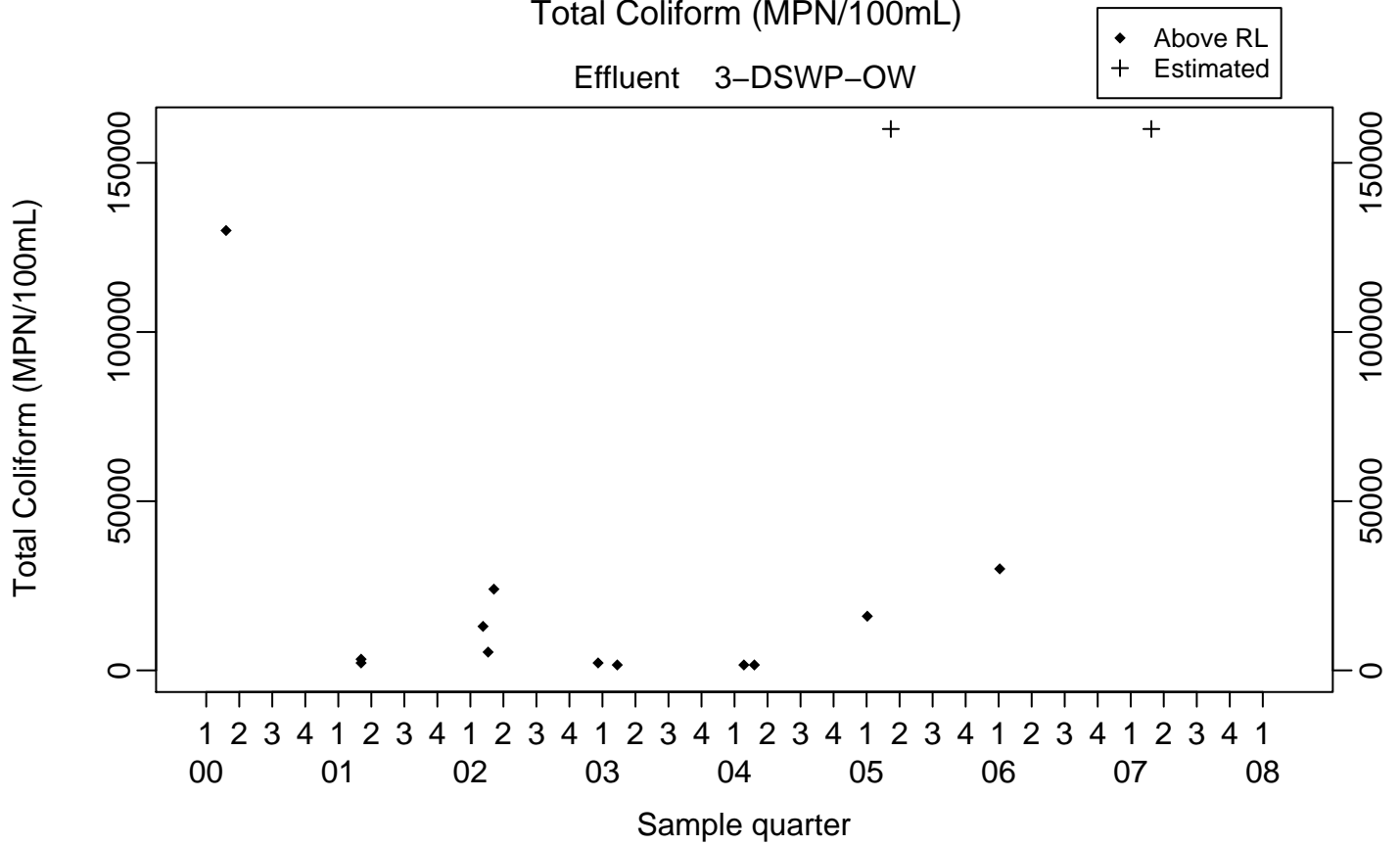
Sewage Ponds Wastewater
Fecal Coliform (MPN/100mL)

Effluent 3-DSWP-OW



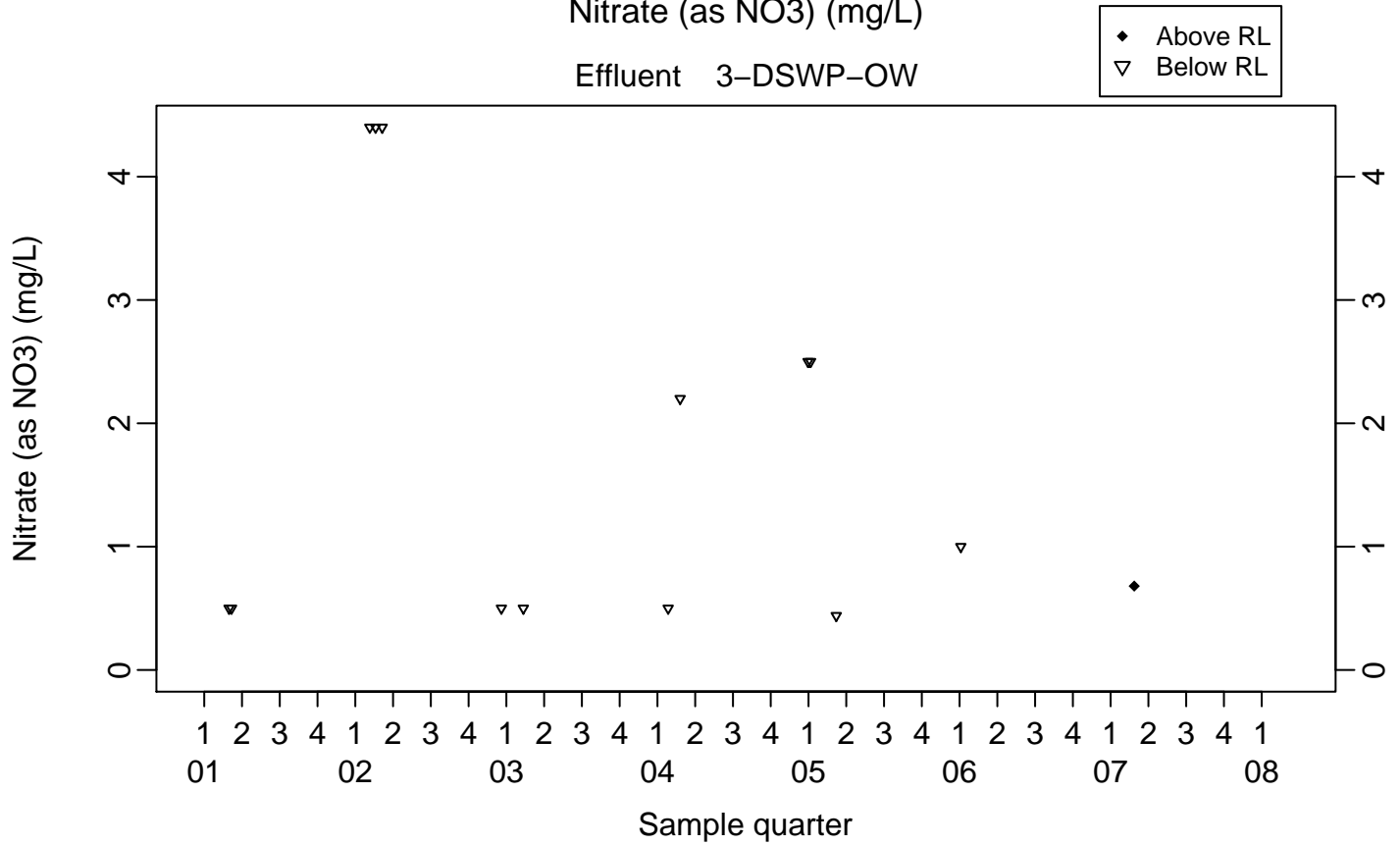
Sewage Ponds Wastewater
Total Coliform (MPN/100mL)

Effluent 3-DSWP-OW



Sewage Ponds Wastewater
Nitrate (as NO₃) (mg/L)

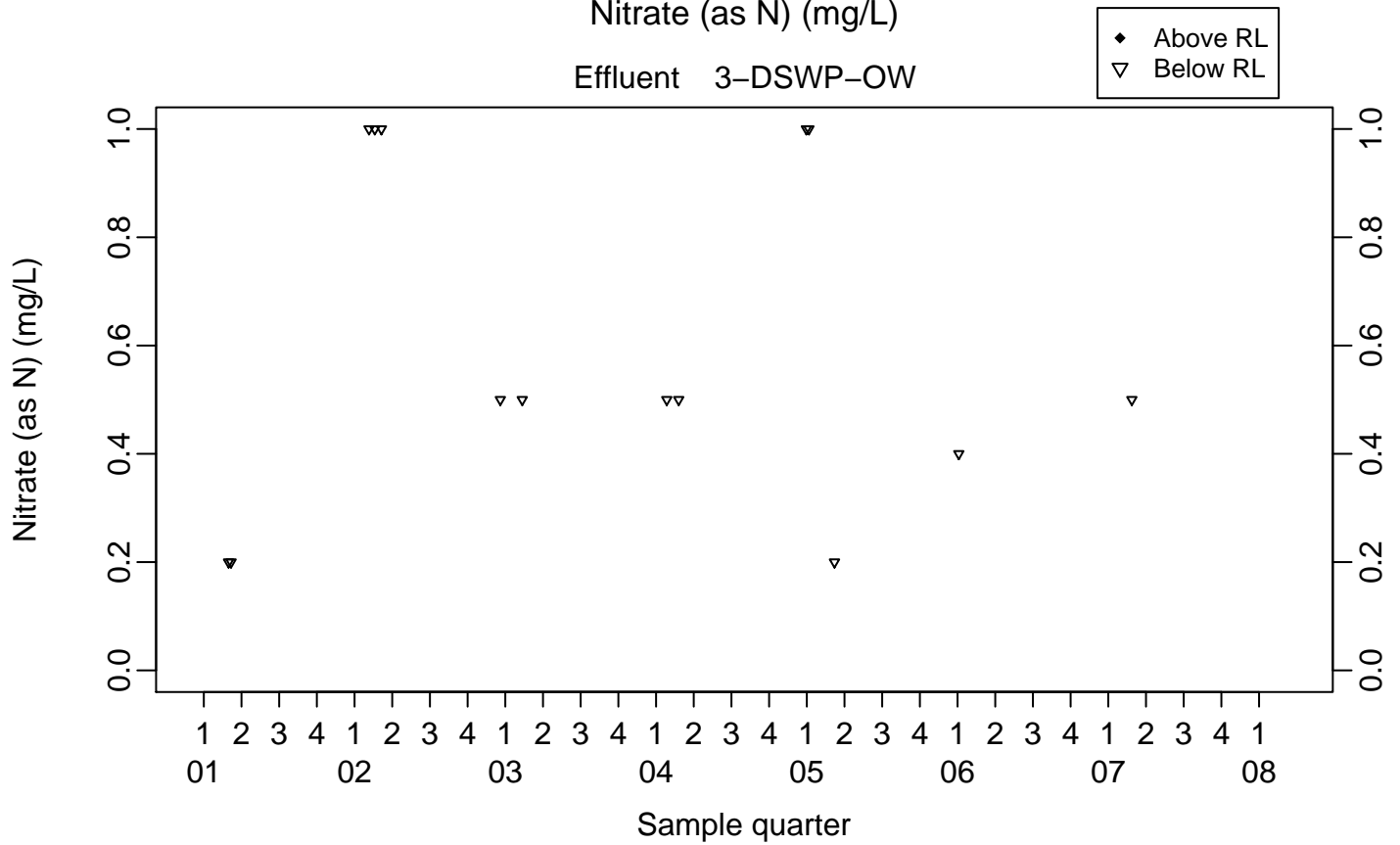
Effluent 3-DSWP-OW



Sewage Ponds Wastewater

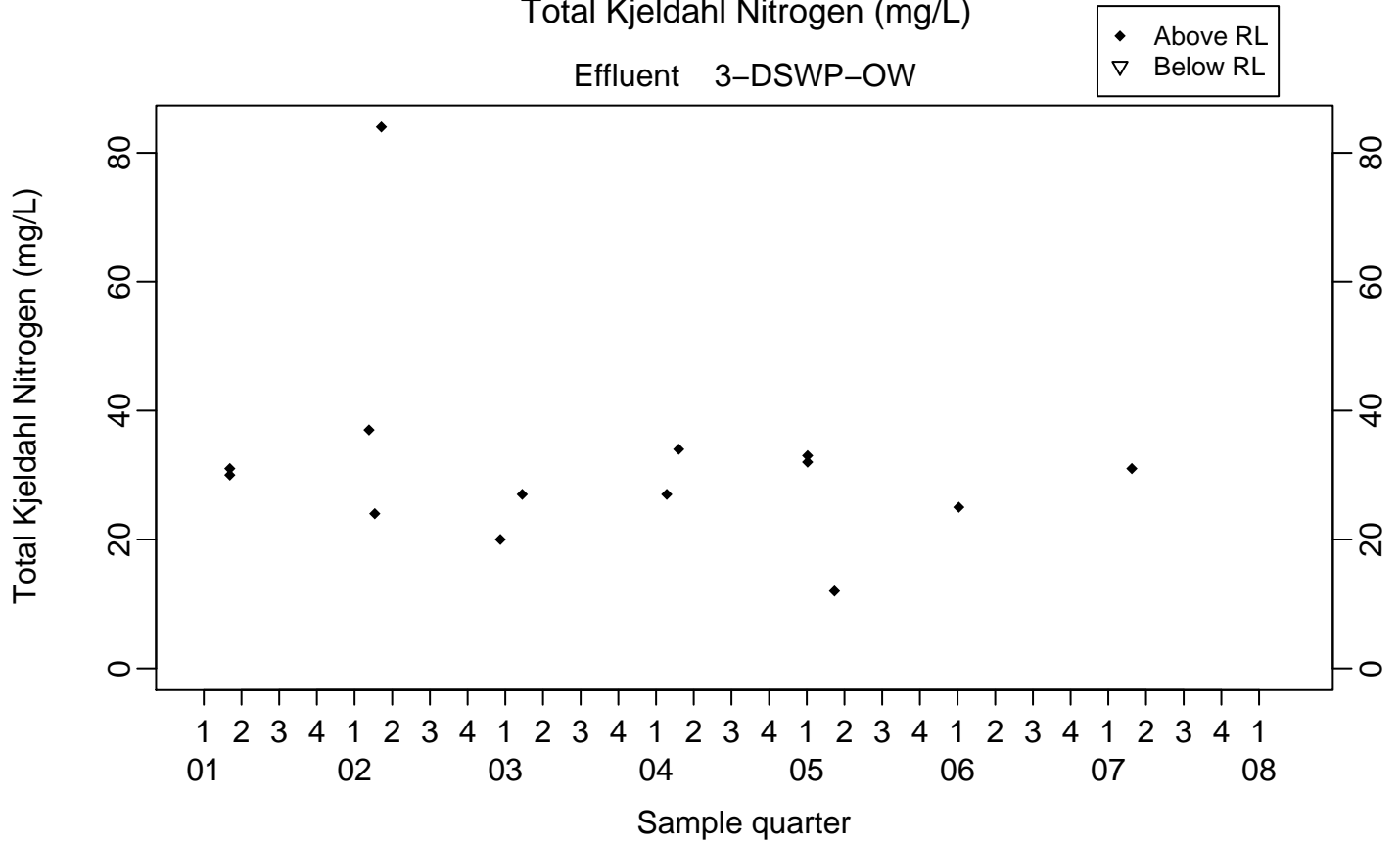
Nitrate (as N) (mg/L)

Effluent 3-DSWP-OW



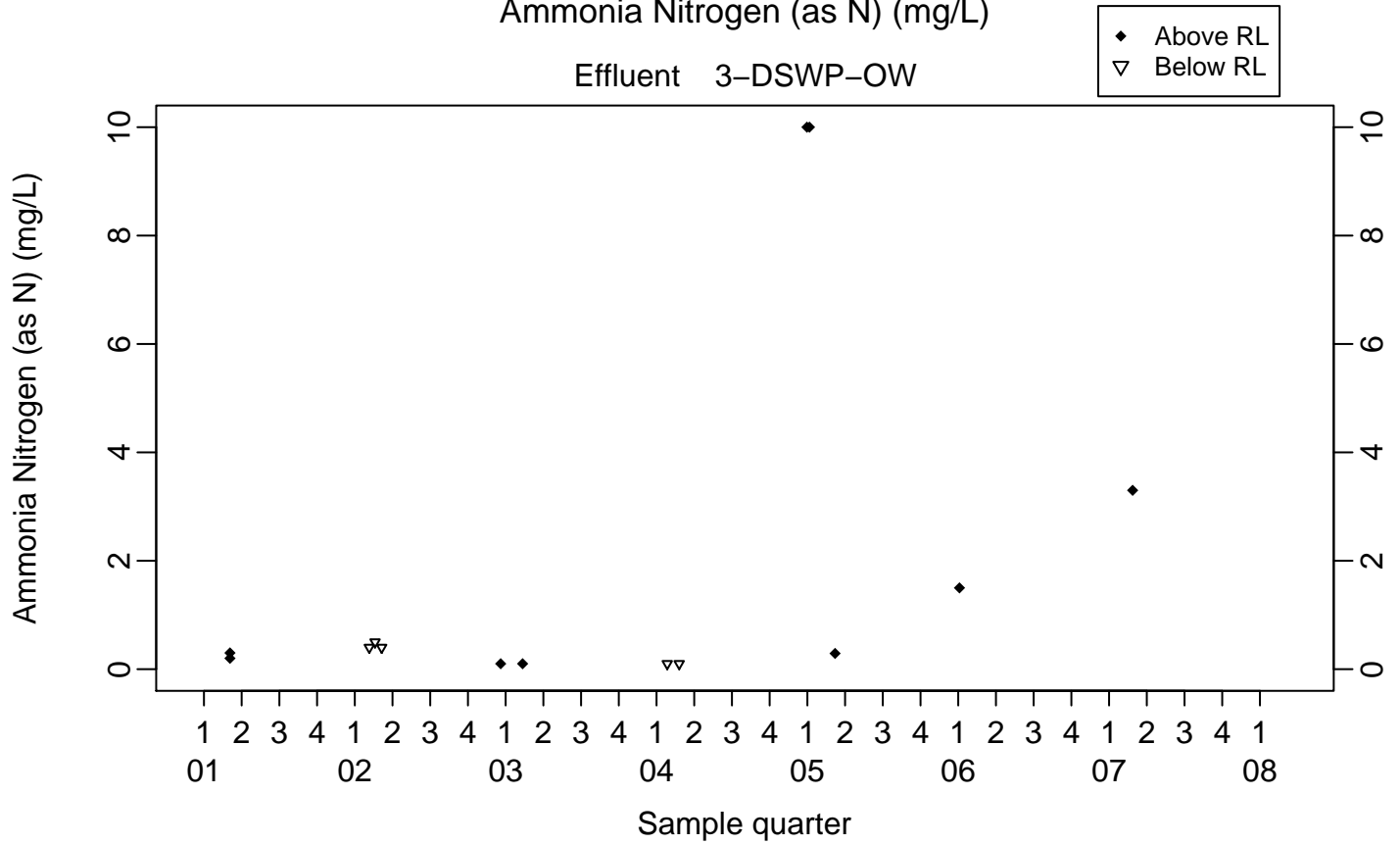
Sewage Ponds Wastewater
Total Kjeldahl Nitrogen (mg/L)

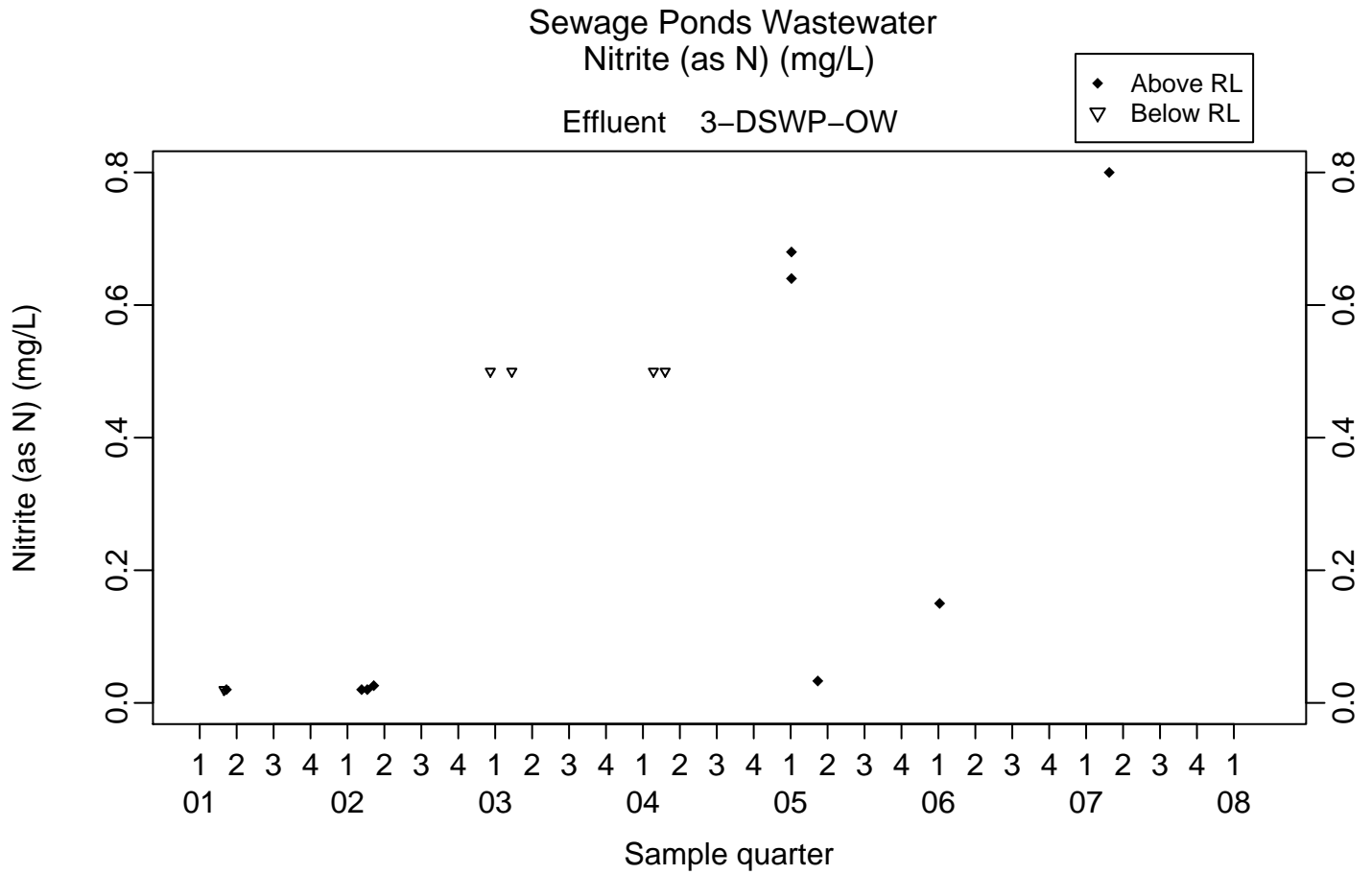
Effluent 3-DSWP-OW



Sewage Ponds Wastewater
Ammonia Nitrogen (as N) (mg/L)

Effluent 3-DSWP-OW





Sewage Ponds Wastewater

Nitrite (as NO₂) (mg/L)

Effluent 3-DSWP-OW

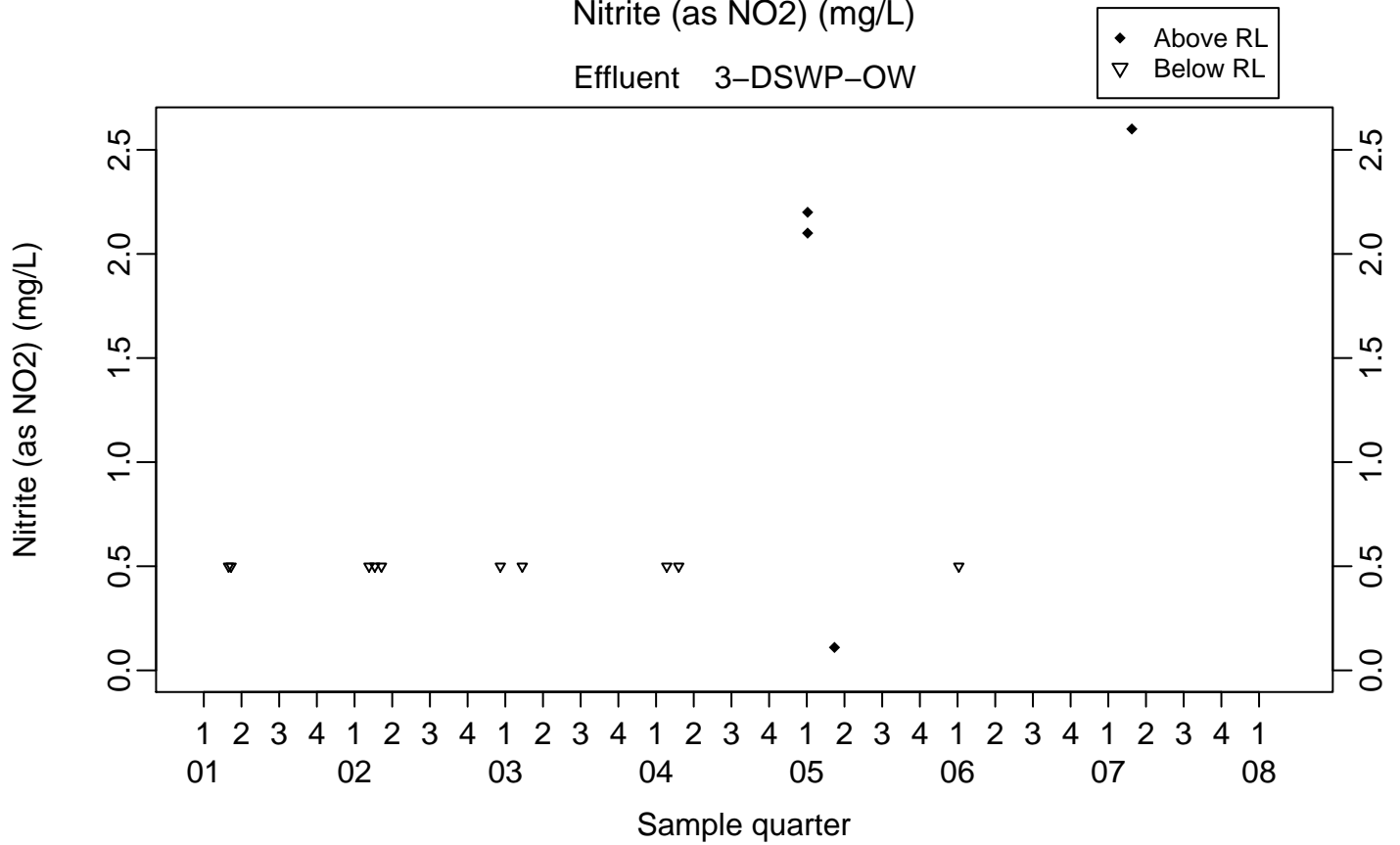


Table D-1. 2007 summary of sewage pond observations.

Month	Freeboard ^a	Color	Odor	Levee condition
January	0.64–0.62	Green	Slight	Animal burrows and erosion are okay, weed control is okay
February	0.58 ^b –0.62	Green	Slight	Animal burrows and erosion are okay, weed control is okay
March	0.54 ^b –0.63	Green	Slight	Animal burrows and erosion are okay, weed control is okay
April	0.63–0.71	Green	Slight	Animal burrows and erosion are okay, weed control is okay
May	0.71–0.74	Green to brown-green	None to slight	Animal burrows and erosion are okay, weed control is okay
June	0.70–0.74	Green to brown-green	Slight	Animal burrows and erosion are okay, weed control is okay
July	0.63–0.71	Green	None to slight	Animal burrows and erosion are okay, weed control is okay
August	0.67–0.74	Green	None to slight	Animal burrows and erosion are okay, weed control is okay
September	0.67–0.71	Green	None to slight	Animal burrows and erosion are okay, weed control is okay
October	0.64–0.70	Green	Slight	Animal burrows and erosion are okay, weed control is okay
November	0.61–0.62	Green	Slight	Animal burrows and erosion are okay, weed control is okay
December	0.58 ^b –0.61	Green	Slight	Animal burrows and erosion are okay, weed control is okay

^a Minimum freeboard is 0.61 m = 2 ft.^b Freeboard in the evaporation pond was slightly less than 0.61 m (2 ft), as the evaporation pond filled and then continuously discharged to the percolation pond.**Table D-2. 2007 sewage wastewater influent monitoring results (Location ISWP).**

Parameter	Permit limits	First quarter	Second quarter	Third quarter	Fourth quarter
pH (units)	6.5 < pH < 10	8.6	8.5	8.3	8.3
SC (μ mhos/cm)	None	2,470	1,420	1,140	2,020
BOD (mg/L)	None	119	144	72	245/290 ^a

^a Sample and duplicate sample results for intralaboratory comparison.

Table D-3. 2007 sewage evaporation pond monitoring results (Location ESWP).

Parameter	Permit limits	First quarter	Second quarter	Third quarter	Fourth quarter
pH (units)	None	9.3	10.3	9.9	8.6
SC (μ mhos/cm)	None	7,090	6,710	7,110	6,240
Laboratory DO (mg/L)	1.0 (min.)	23.2/22.8 ^a	13.1	19.8	<0.5 ^b /8.99 ^c

^a Duplicate sample from location ESWP was analyzed for DO only.

^b Suspect DO laboratory data point taken 11/28/07 at 14:00 hours.

^c DO field measurement taken 11/28/07 at 14:00 hours (the same time as the laboratory sample was collected). Additional field measurements were taken for DO on 11/26/07 (8 mg/L) at 13:30 hours and 11/29/07 (12 mg/L at 13:00 hours. A total of 28 field measurements were taken during the fourth quarter of 2007, and none of the results were below 8 mg/L. The pond is green and has only a slight odor, which is characteristic of sufficient aeration with a high dissolved oxygen concentration. If the pond contained less than 0.5 mg/L of DO, as indicated by the laboratory result, the pond would be brown and have a very strong odor. Therefore, the result of <0.5 mg/L DO is considered suspect.

Table D-4. 2007 sewage percolation pond discharge location (Location DSWP).

Parameter	Permit limits	February 27
pH (units)	6.5 < pH < 10	9.2
SC (μ mhos/cm)	None	7,030
BOD (mg/L)	None	<32
Fecal coliform (MPN ^a /100 mL)	None	7,000
Total coliform (MPN ^a /100 mL)	None	>160,000
Nitrate as NO ₃	None	0.68
Nitrite as N	None	0.80
Ammonia as N	None	3.3
Total Kjeldahl nitrogen	None	31

^a MPN = Most probable number (of organisms).

Appendix E

Annual Summary Plots and Table of Sewage Evaporation and Percolation Ponds Ground Water Monitoring Data

Appendix E

This appendix contains graphical summaries of ground water monitoring data since 1994, and a tabular summary of 2007 ground water monitoring data from the sewage ponds ground water network.

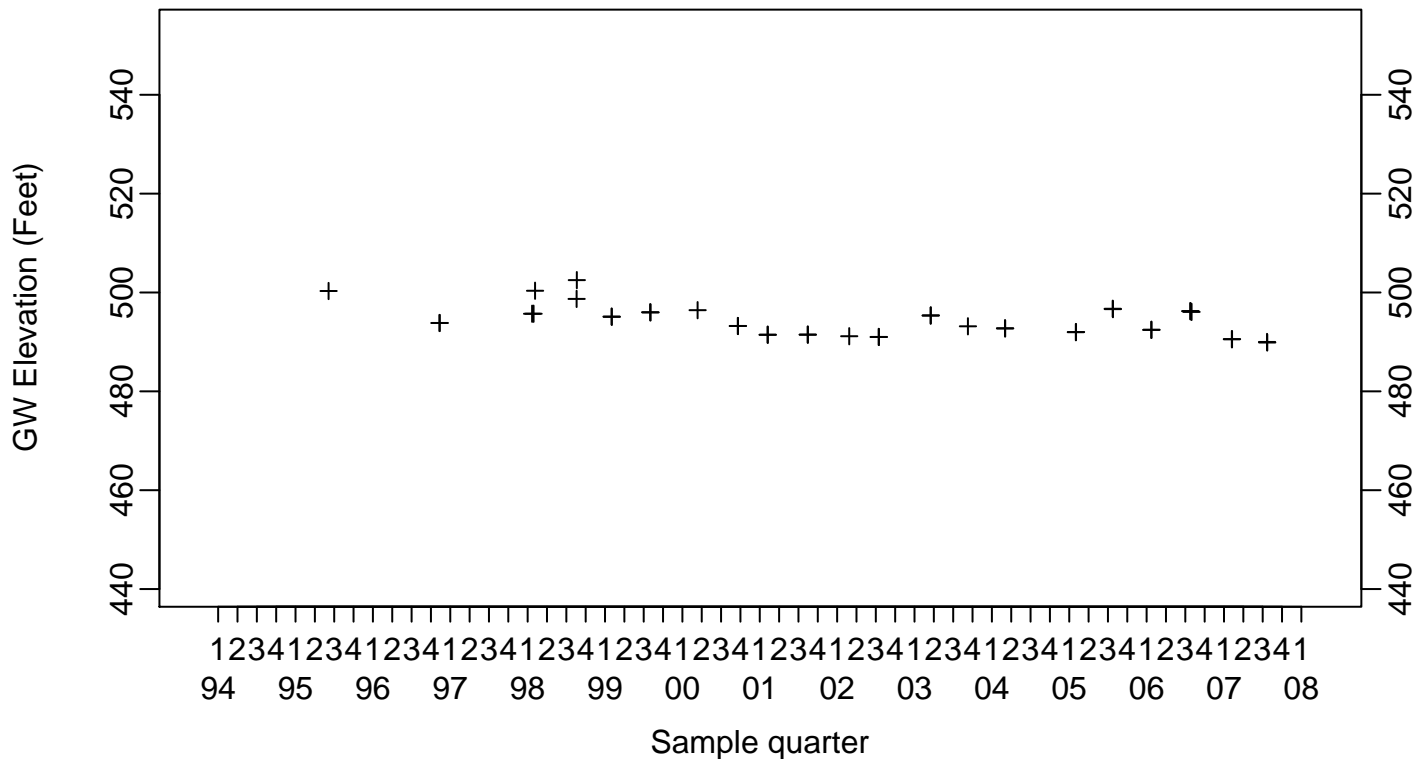
The plots display the field parameter of ground water elevation and the analytical results of pH, specific conductance (SC), total coliform bacteria, fecal coliform bacteria, and finally nitrate (as NO_3). The upgradient (background) monitoring wells W-7E, W-7ES, and W-7PS are always plotted first for each analyte.

Each two-dimensional graph shows concentration plotted on the vertical axis versus time on the horizontal axis. Units of measure are given on the vertical axis label and in the header at the top of each page. Values above the analytical reporting limit for each analyte are plotted as solid diamonds, and values below the reporting limit are plotted as open inverted triangles.

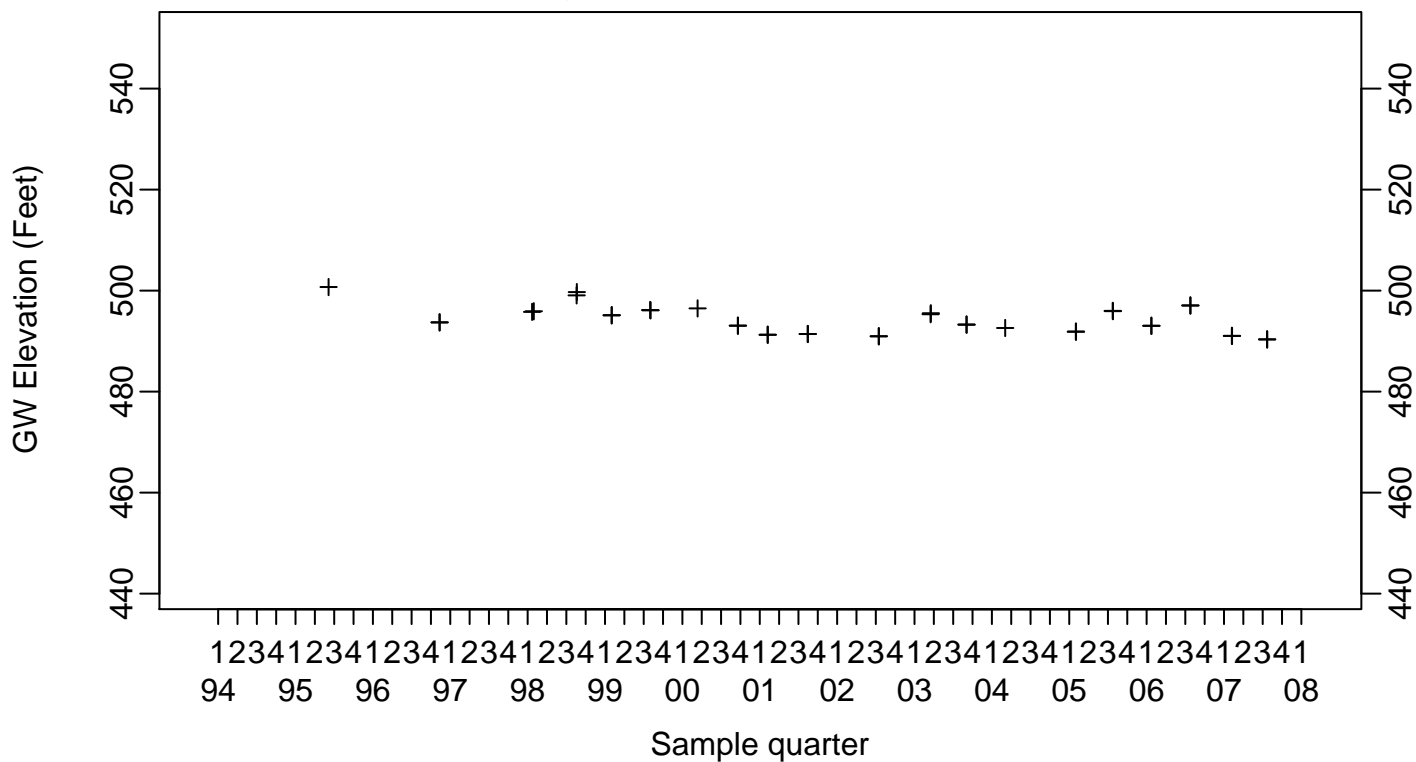
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Sewage Ponds Ground Water
GW Elevation (Feet)

Upgradient Monitor Well W-7E

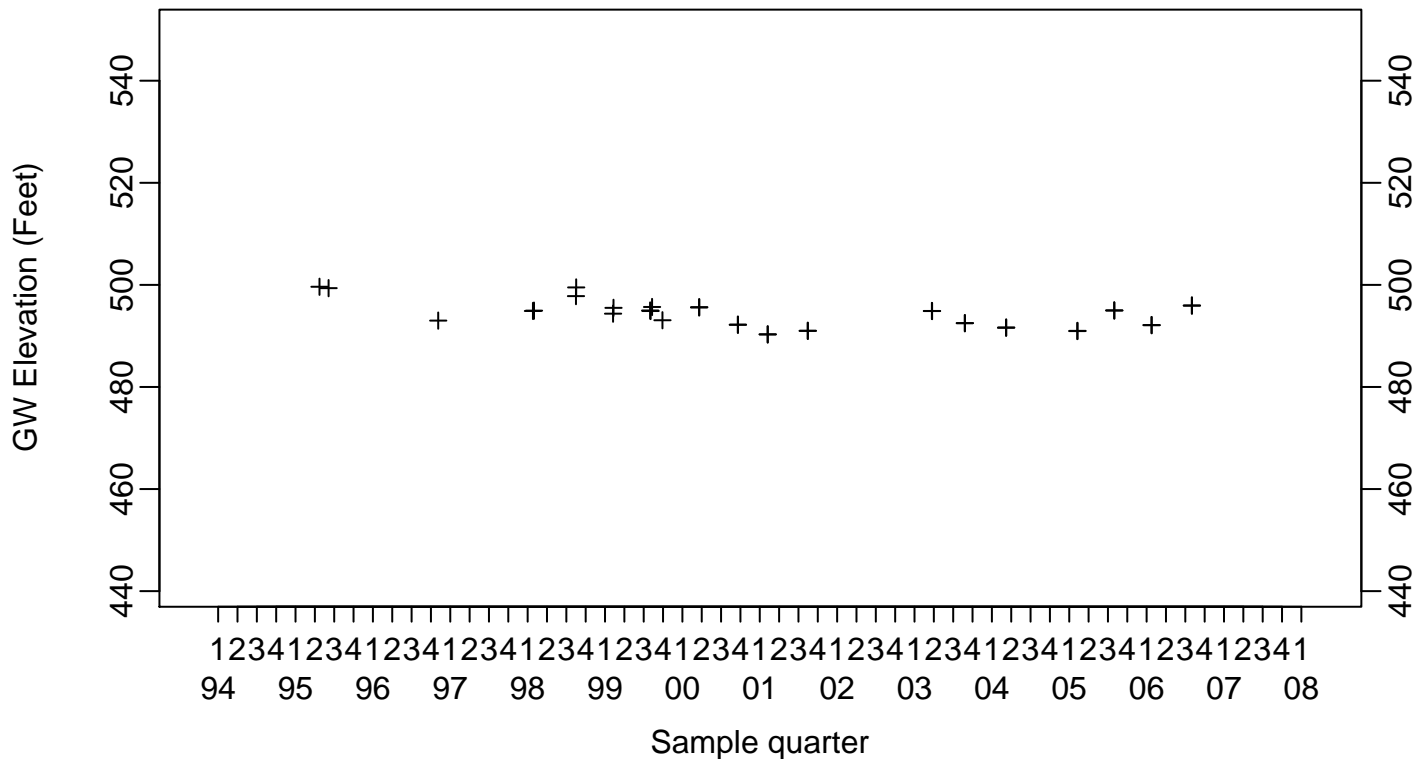


Upgradient Monitor Well W-7ES

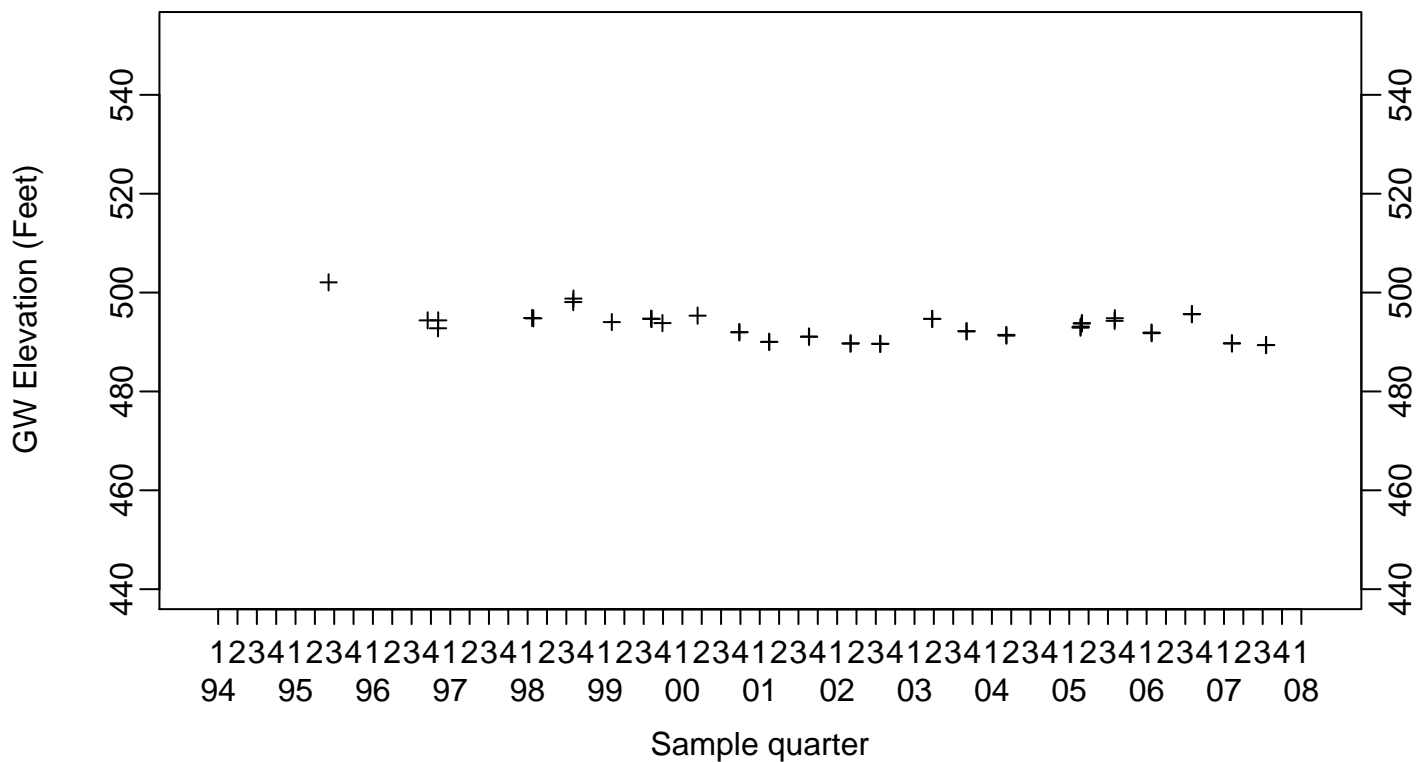


Sewage Ponds Ground Water
GW Elevation (Feet)

Upgradient Monitor Well W-7PS

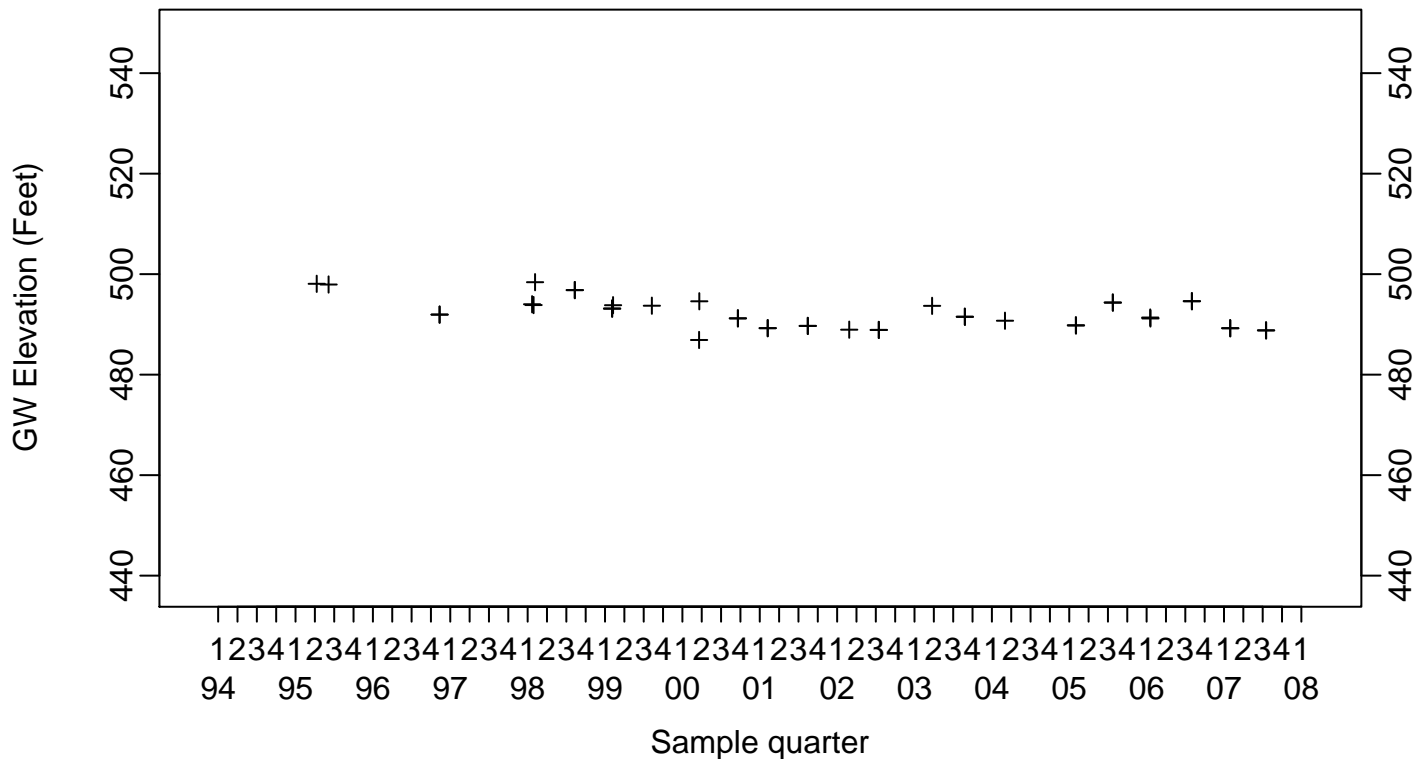


Crossgradient Monitor Well W-35A-04

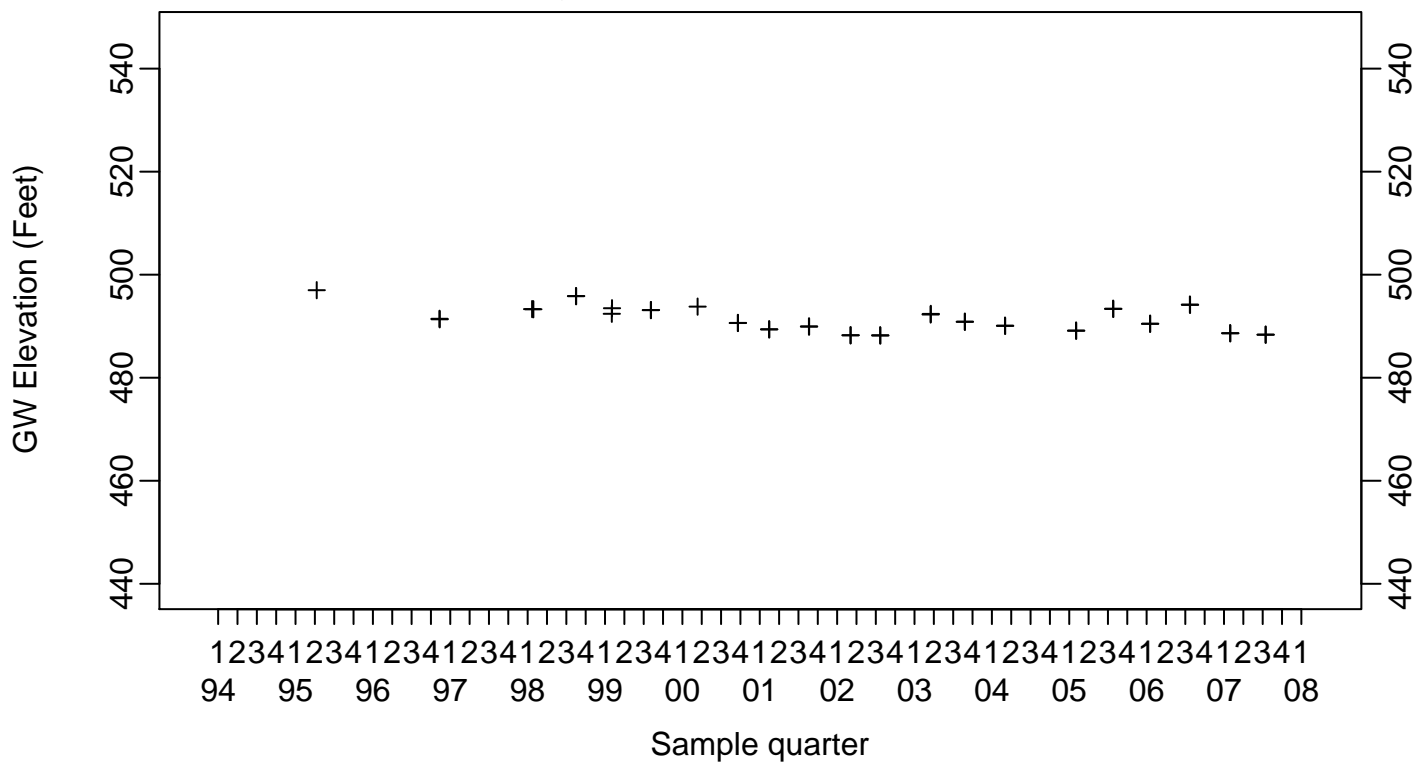


Sewage Ponds Ground Water
GW Elevation (Feet)

Downgradient Monitor Well W-7DS

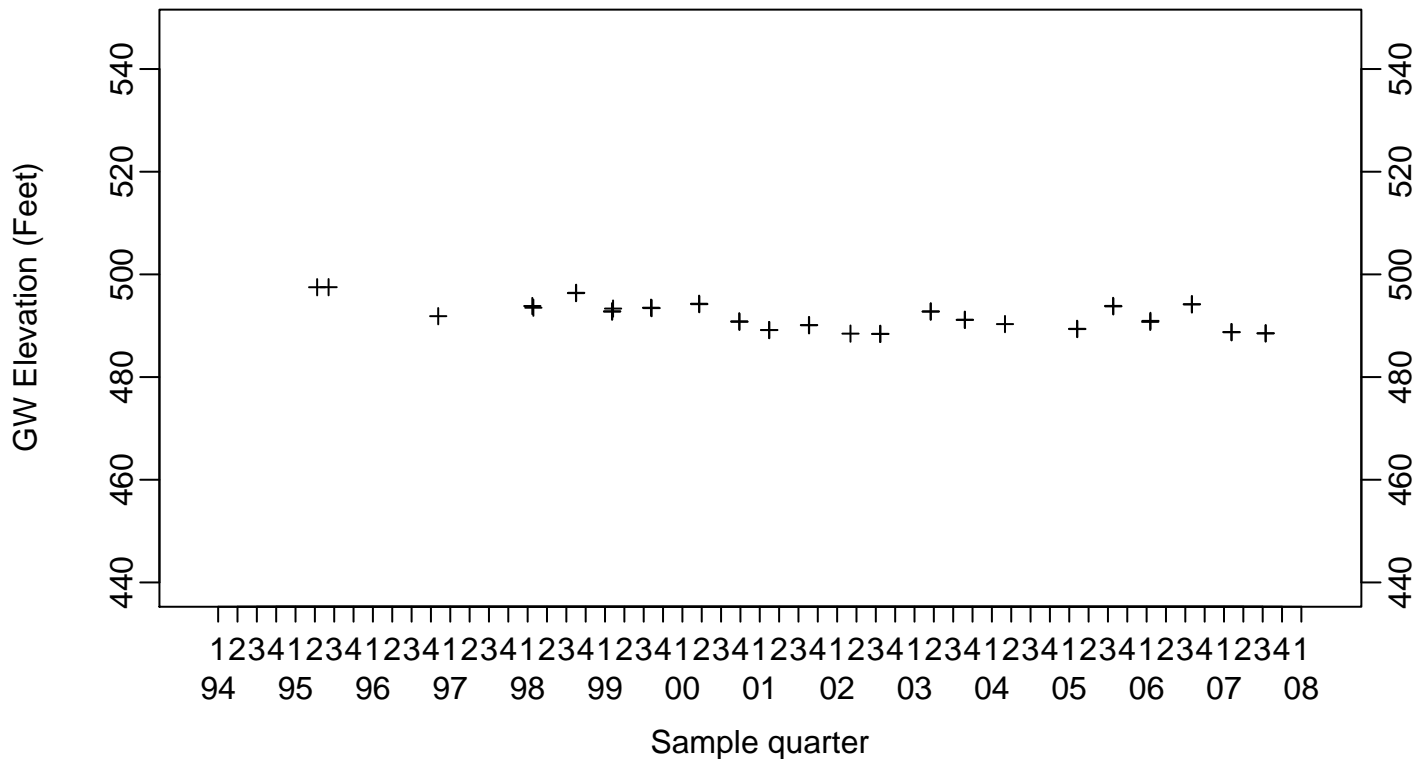


Downgradient Monitor Well W-25N-20

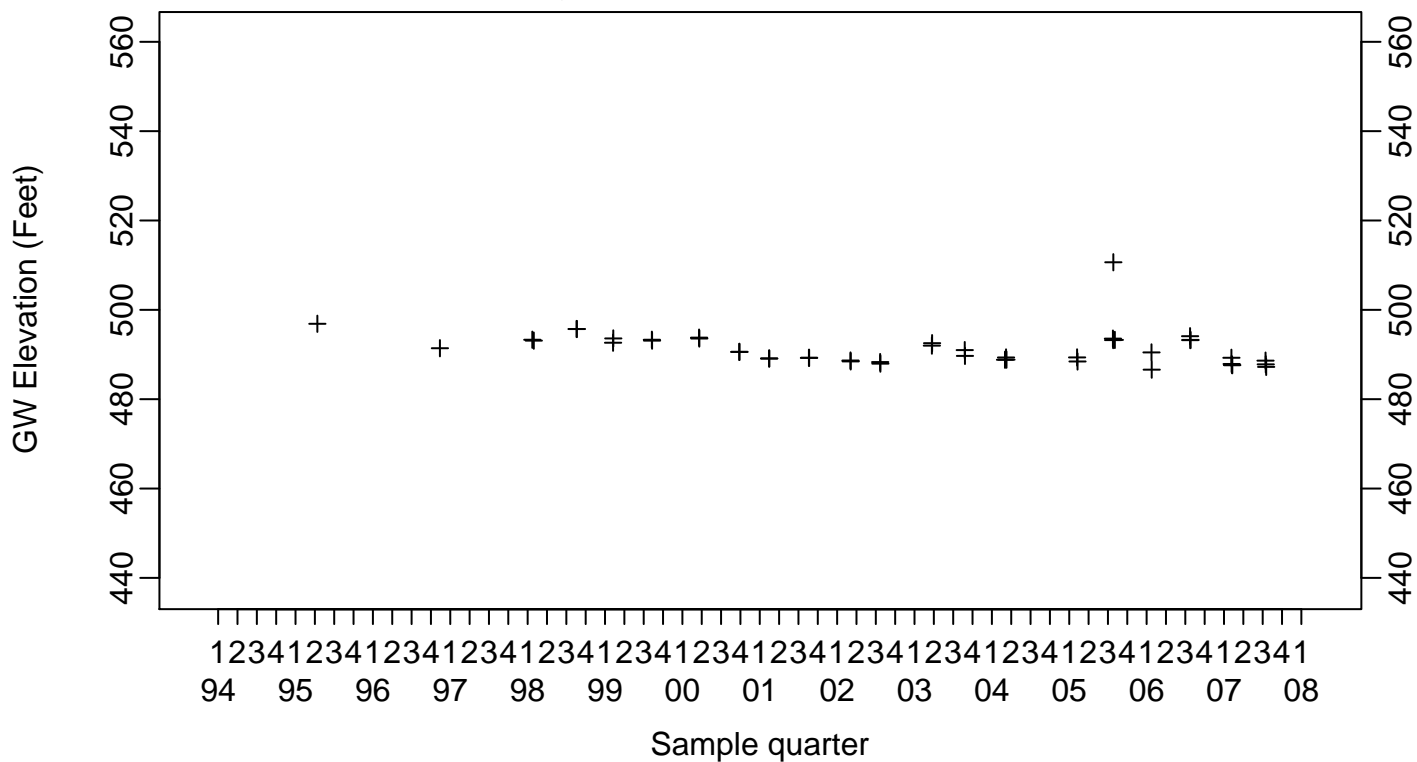


Sewage Ponds Ground Water
GW Elevation (Feet)

Downgradient Monitor Well W-26R-01

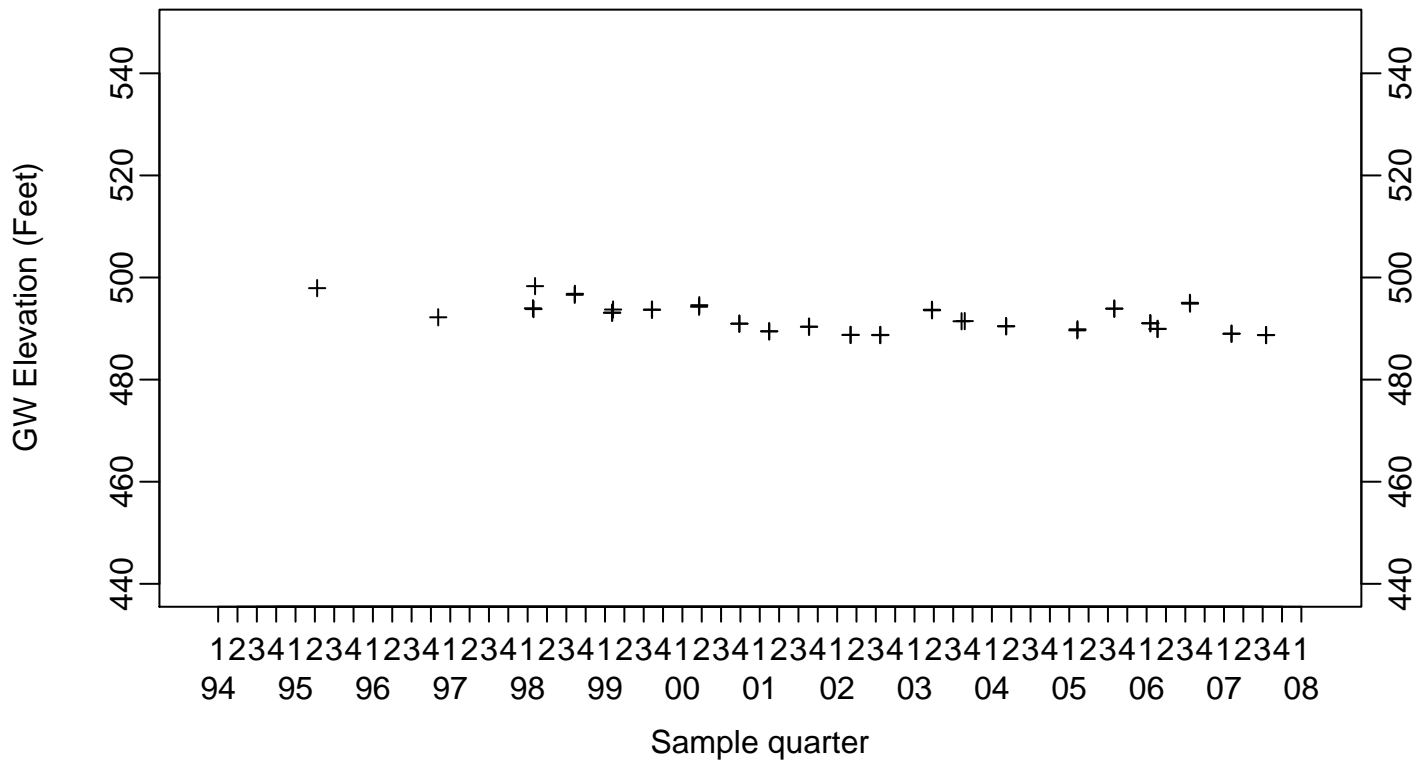


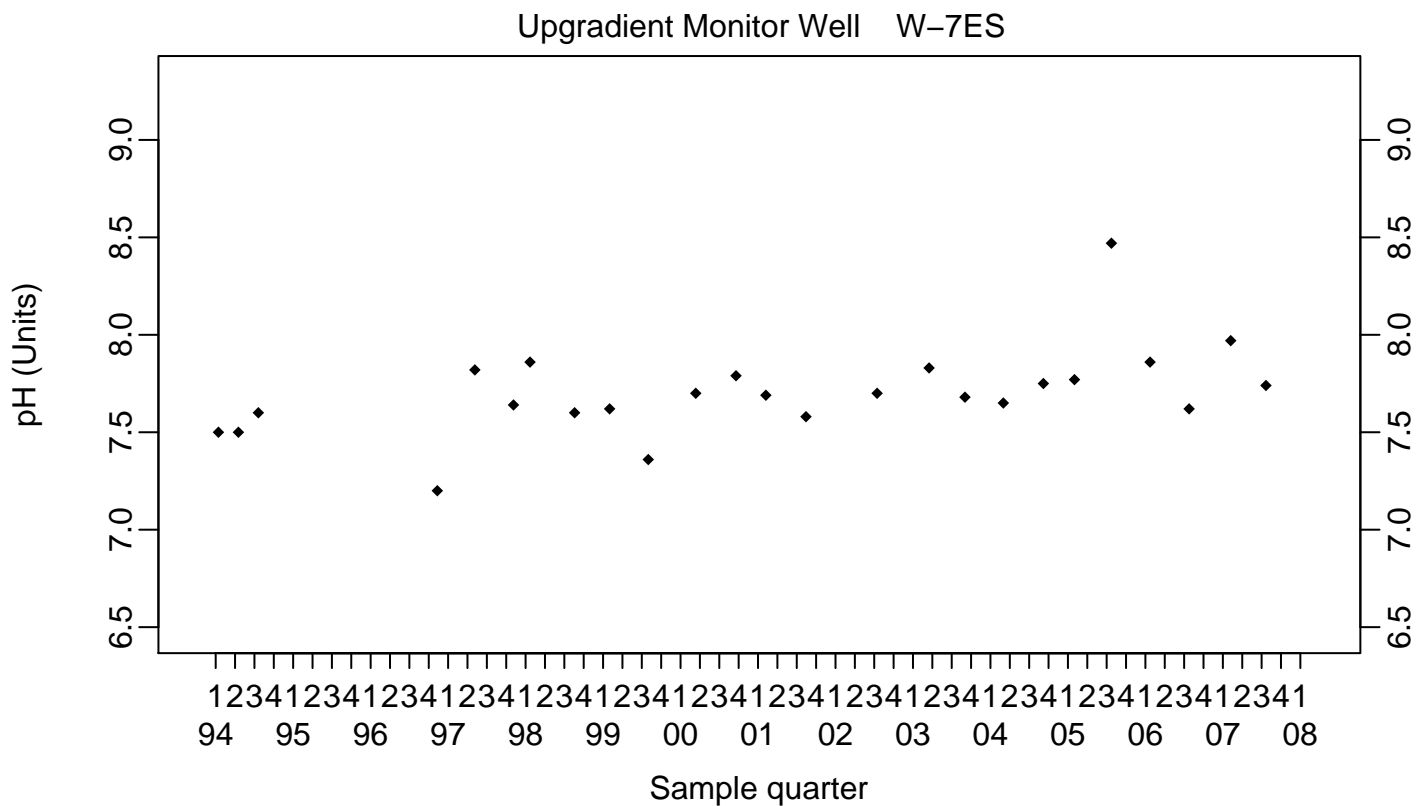
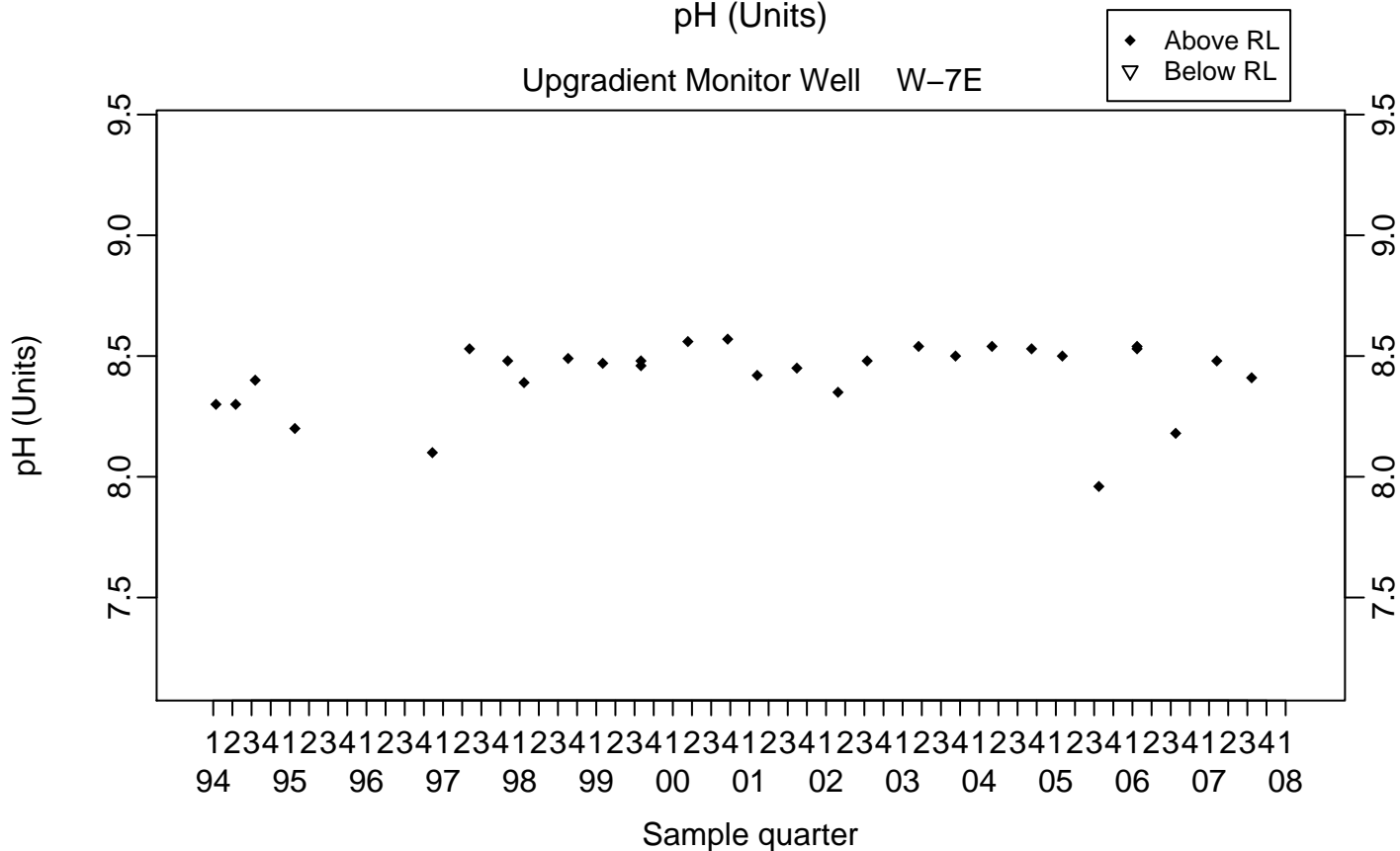
Downgradient Monitor Well W-26R-05



Sewage Ponds Ground Water
GW Elevation (Feet)

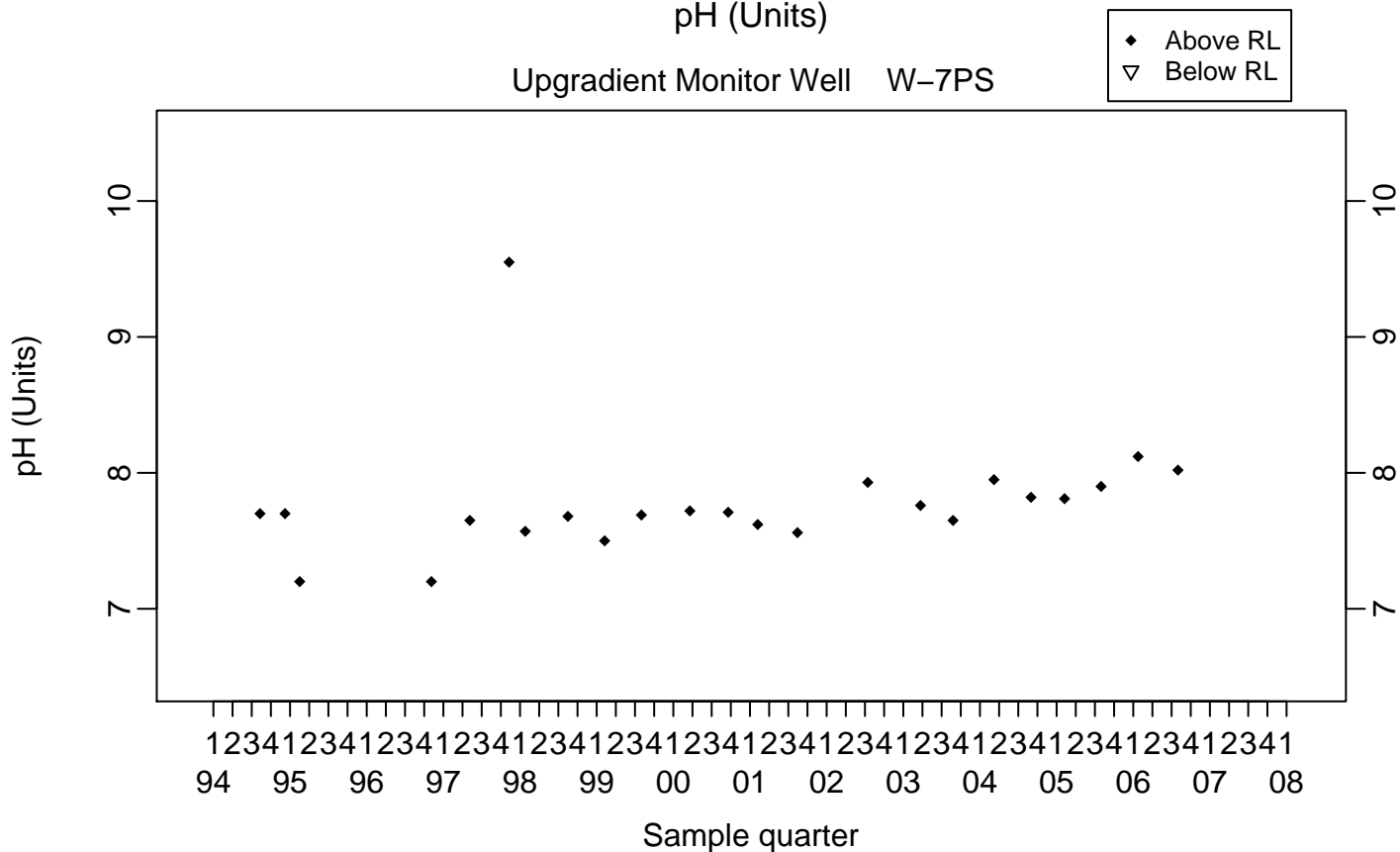
Downgradient Monitor Well W-26R-11



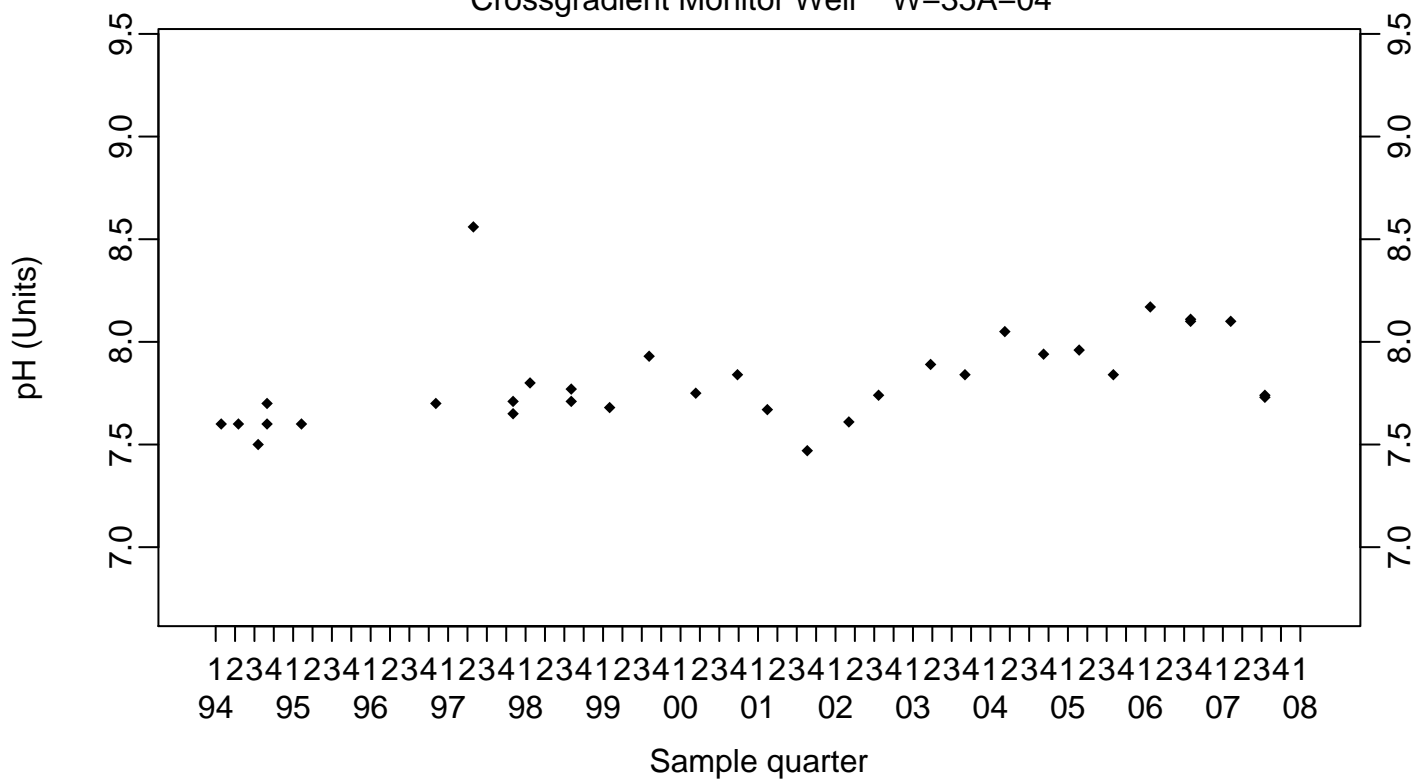
Sewage Ponds Ground Water
pH (Units)

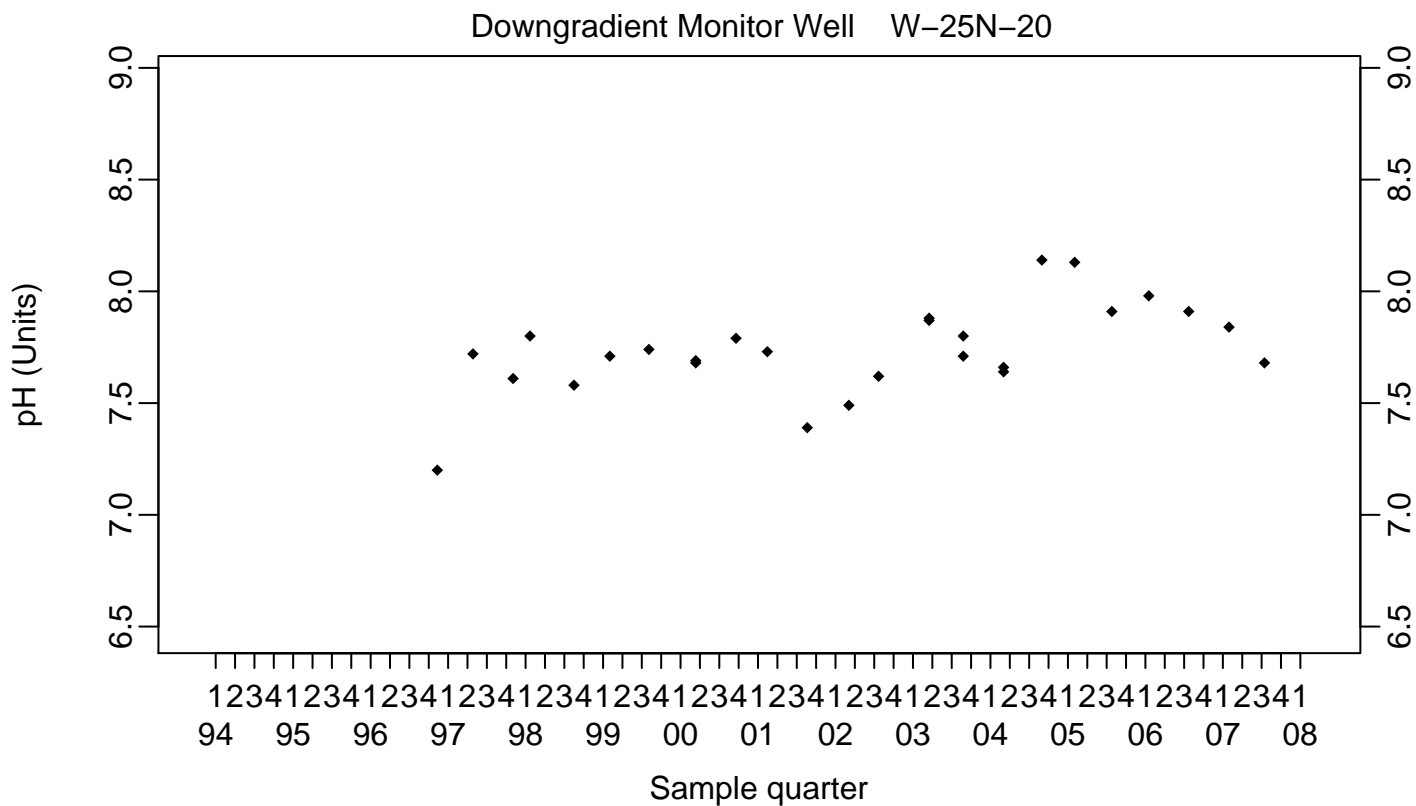
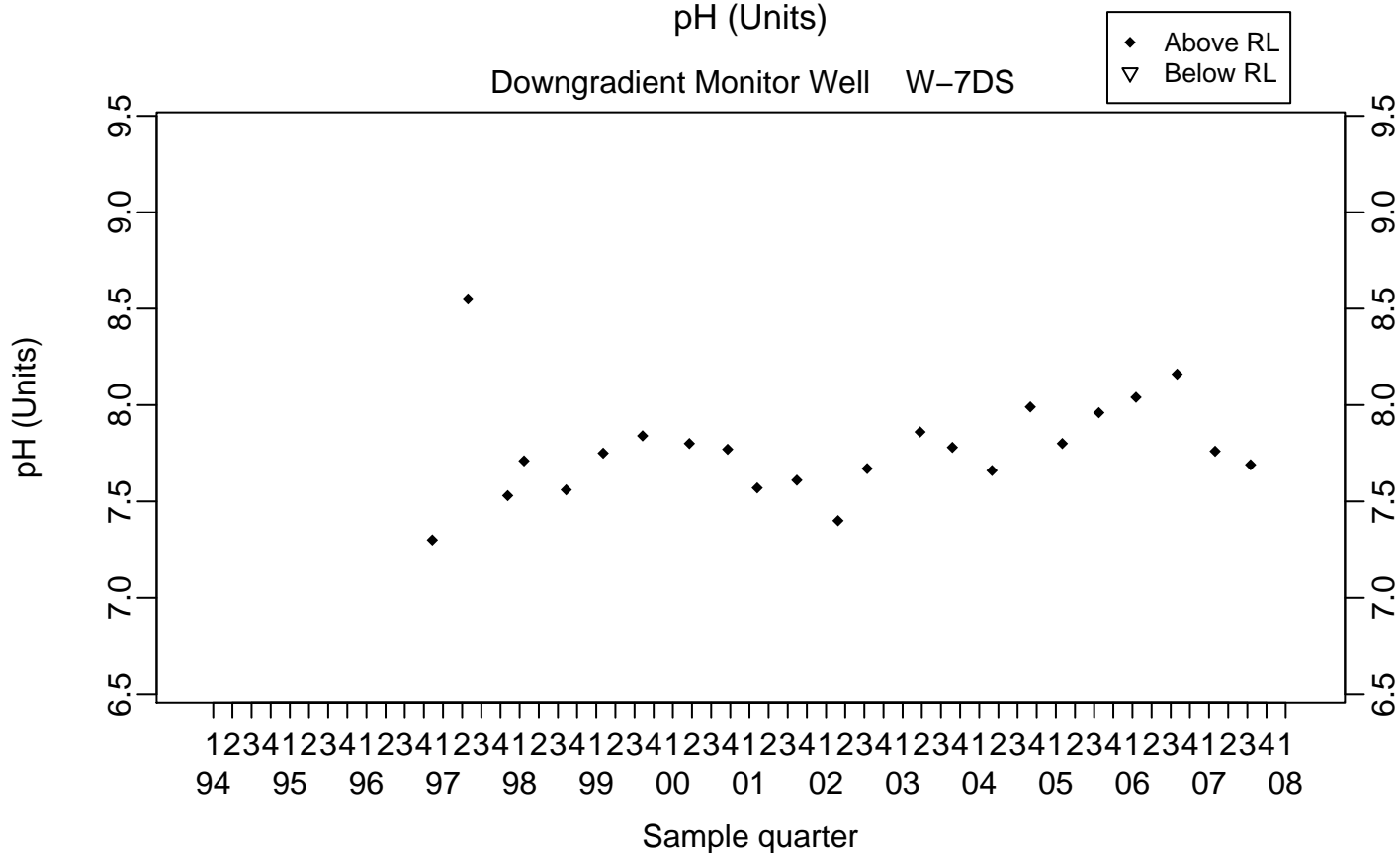
Sewage Ponds Ground Water
pH (Units)

Upgradient Monitor Well W-7PS



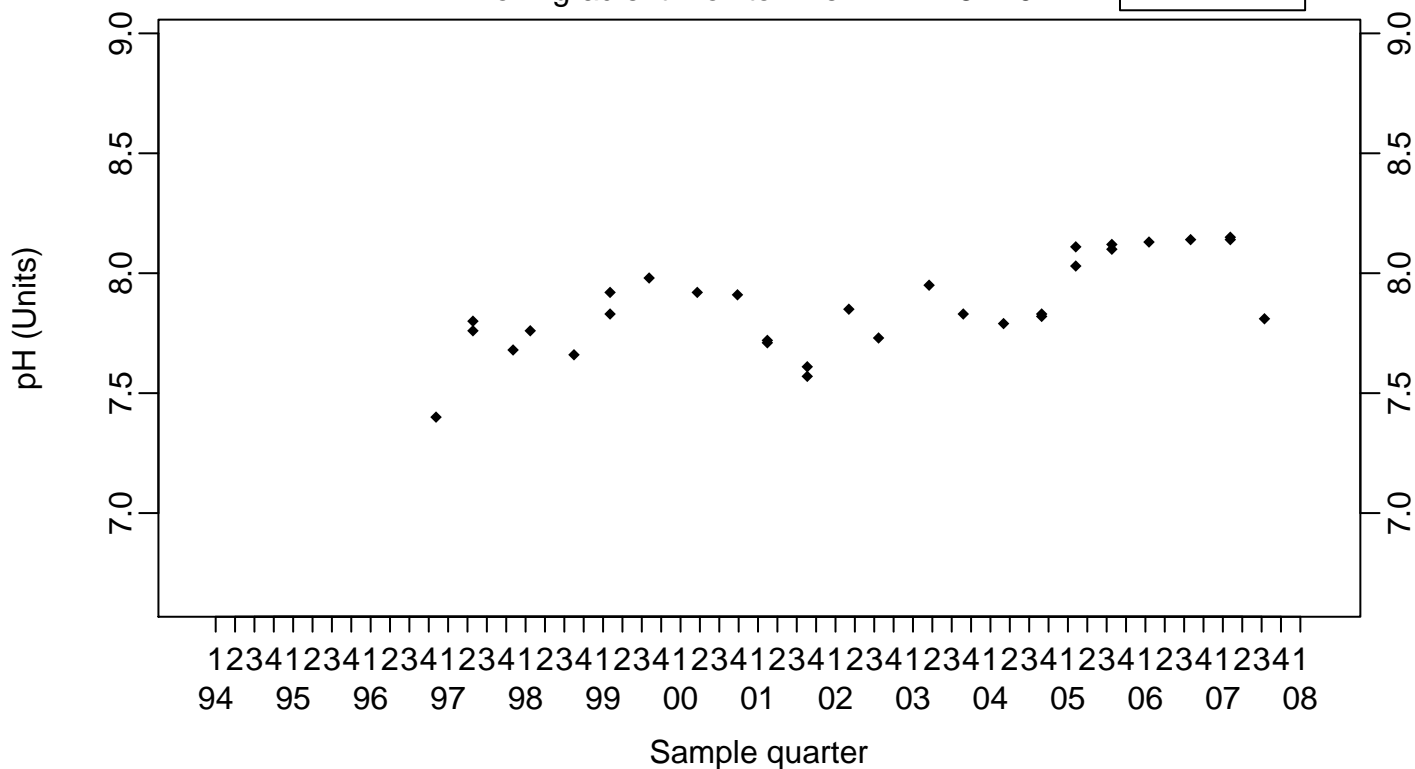
Crossgradient Monitor Well W-35A-04



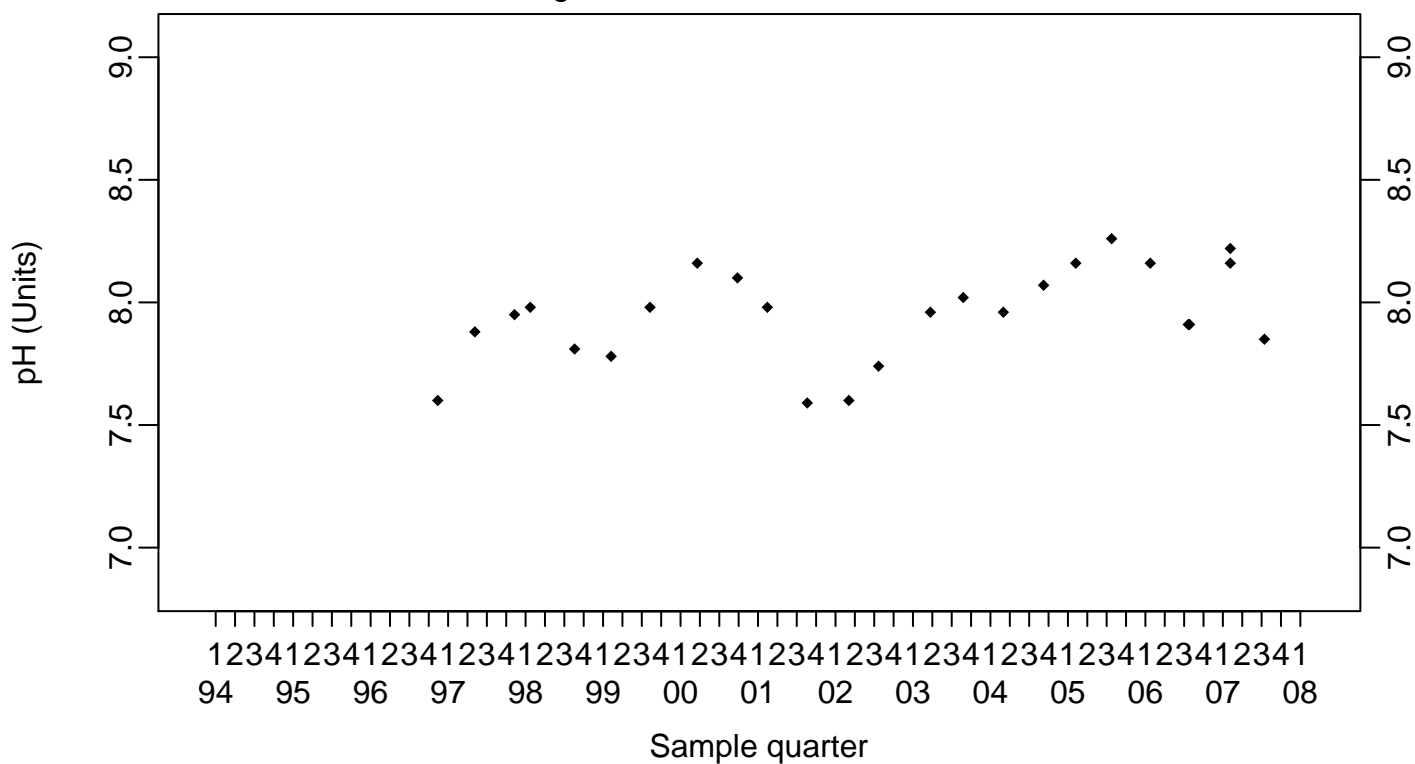
Sewage Ponds Ground Water
pH (Units)

Sewage Ponds Ground Water
pH (Units)

Downgradient Monitor Well W-26R-01

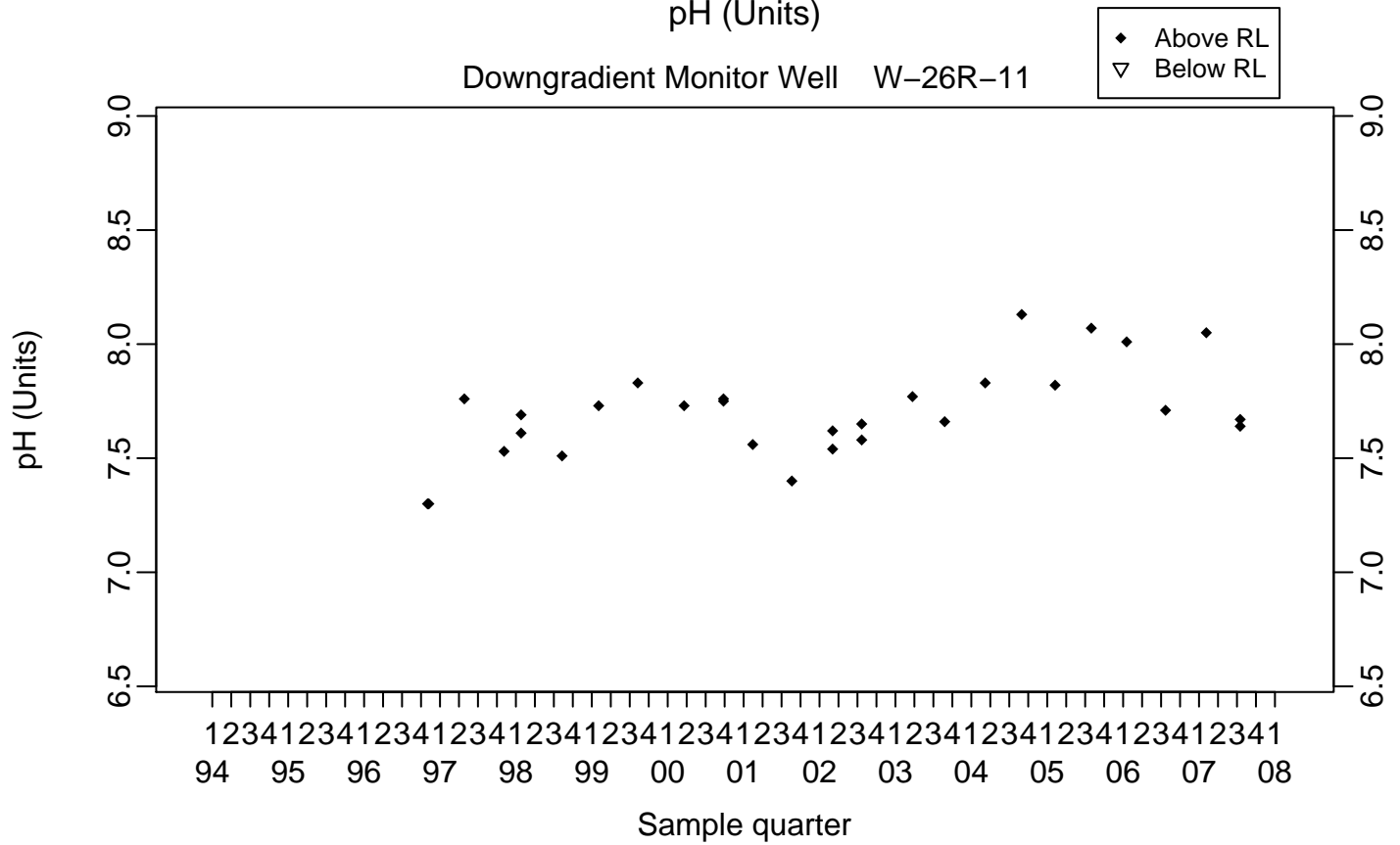
◆ Above RL
▽ Below RL

Downgradient Monitor Well W-26R-05



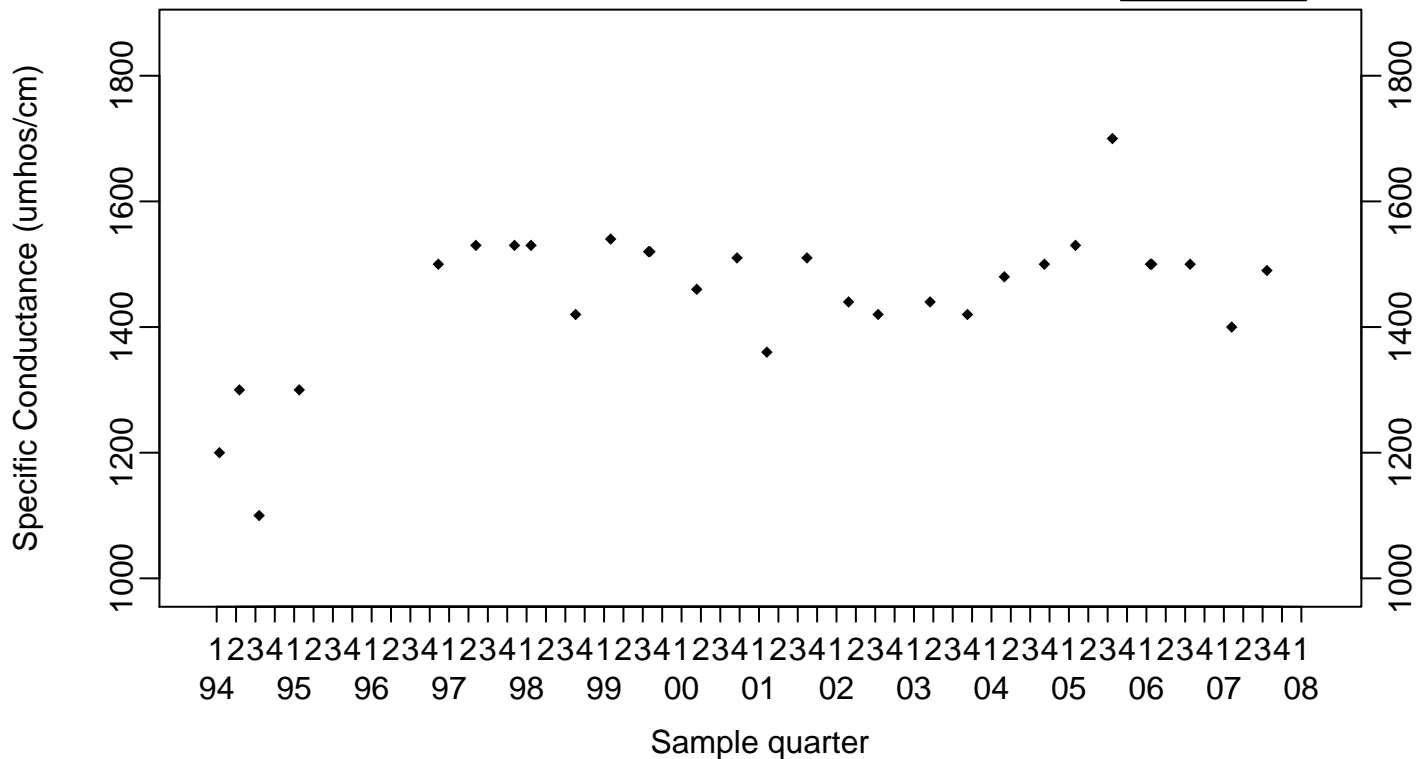
Sewage Ponds Ground Water
pH (Units)

Downgradient Monitor Well W-26R-11

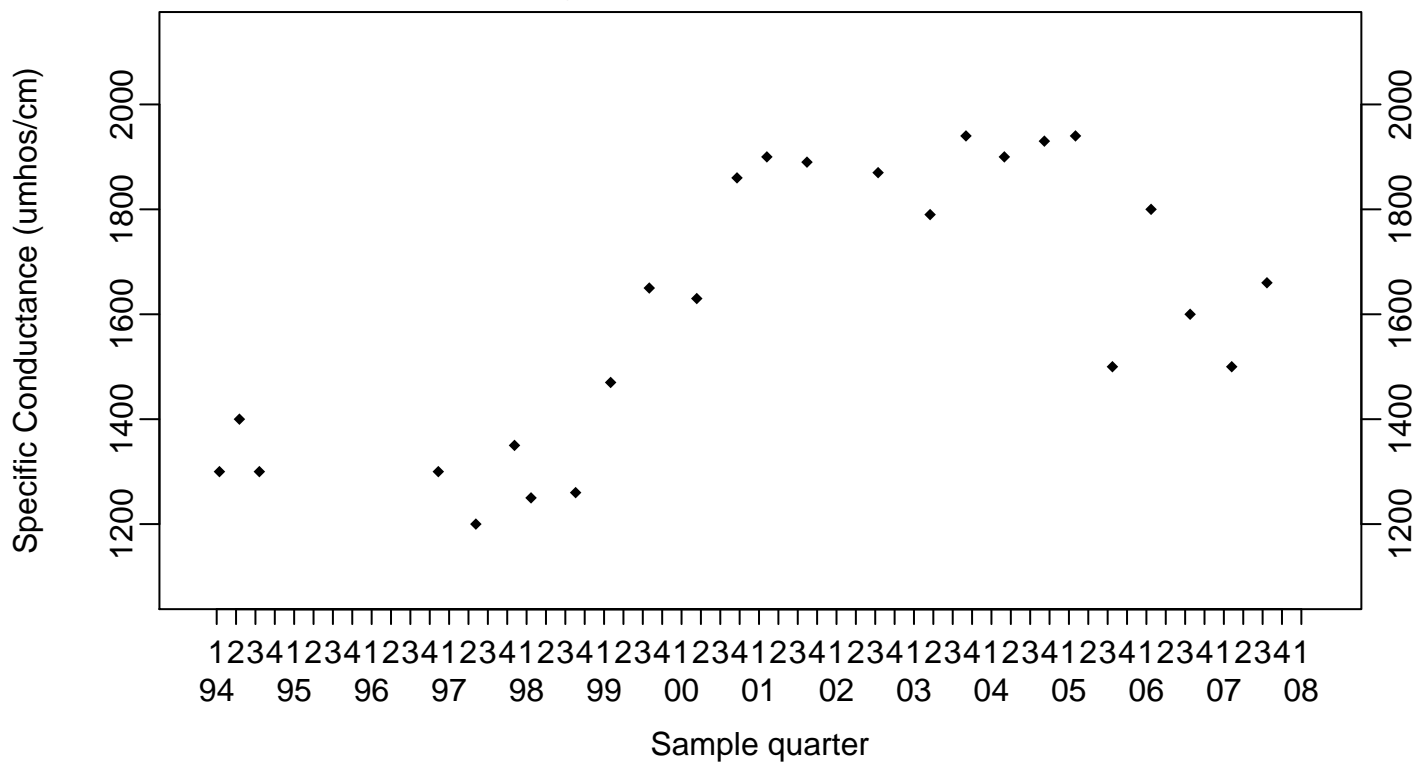


Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

Upgradient Monitor Well W-7E

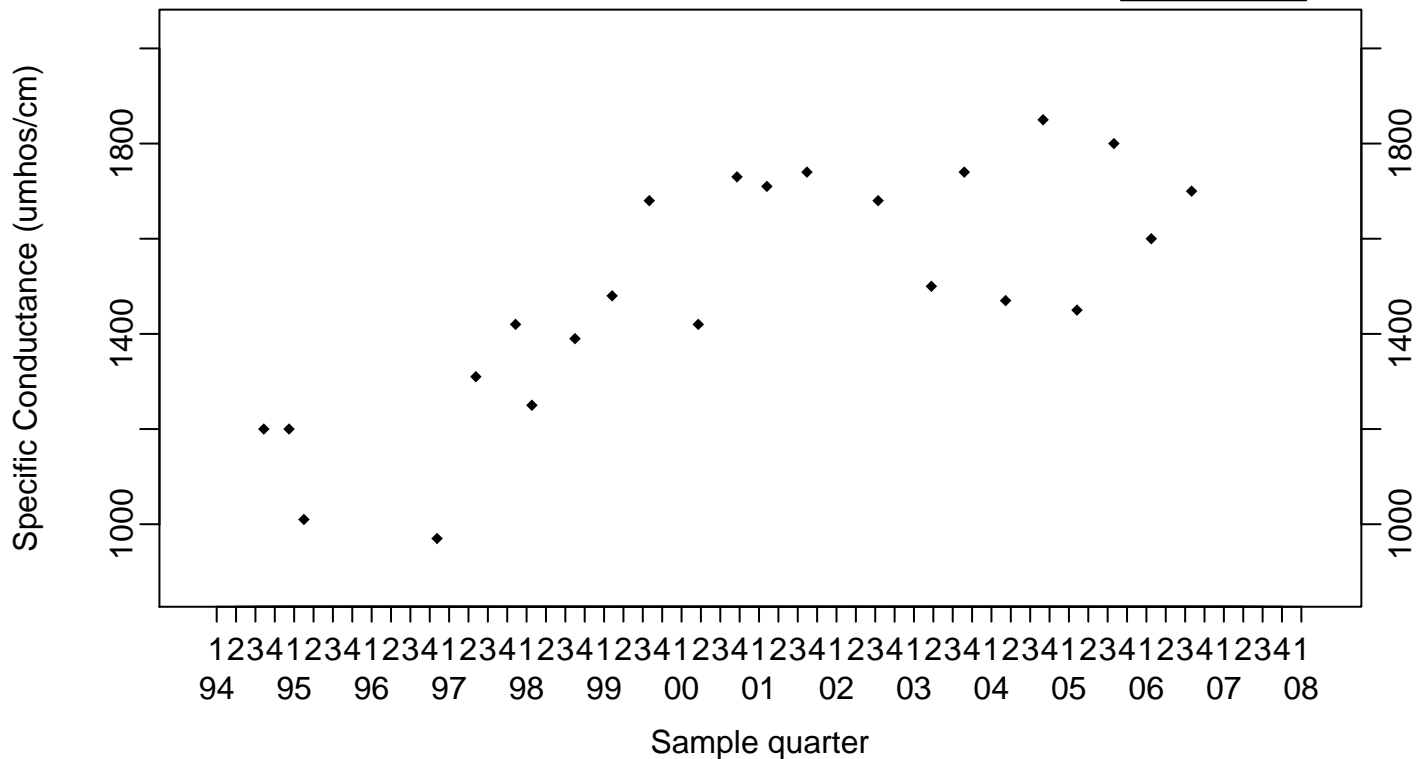
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Upgradient Monitor Well W-7ES

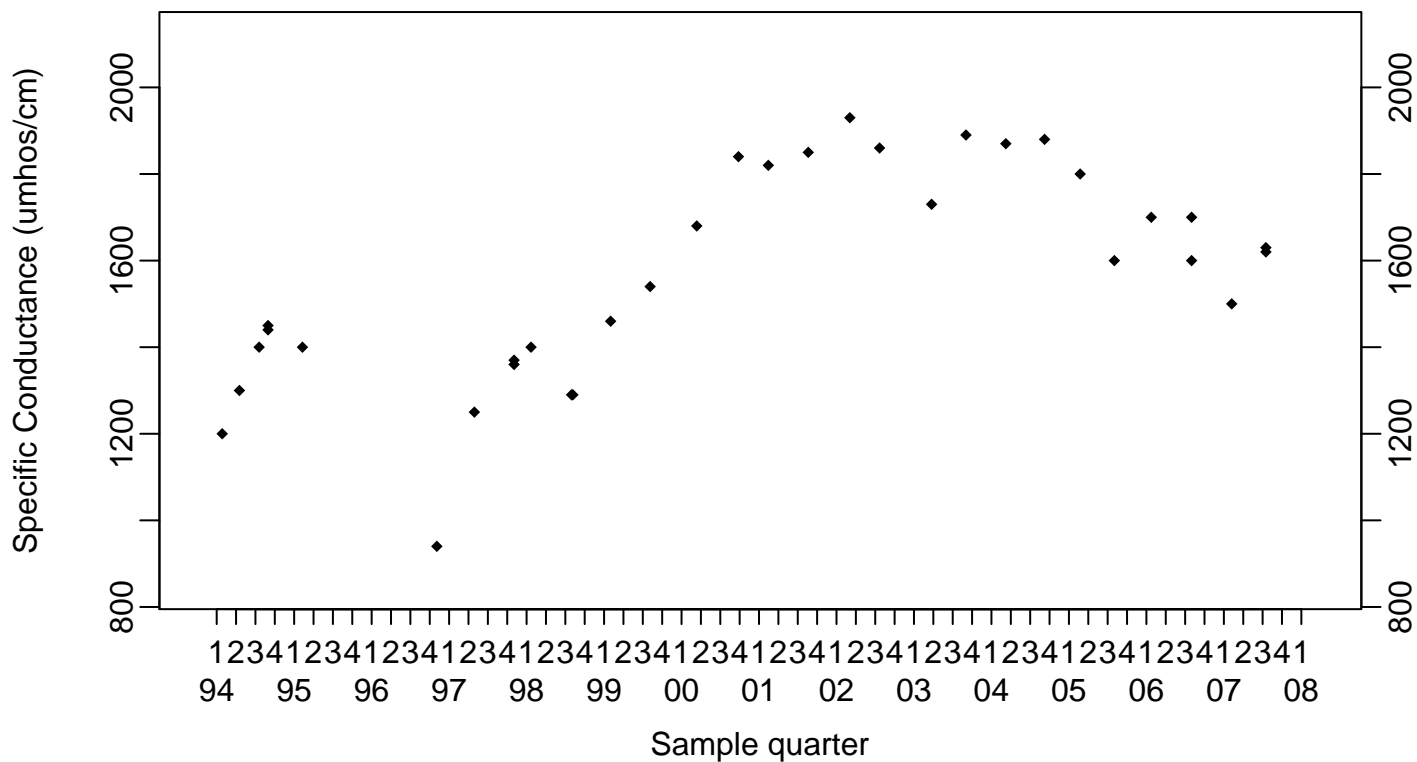


Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

Upgradient Monitor Well W-7PS

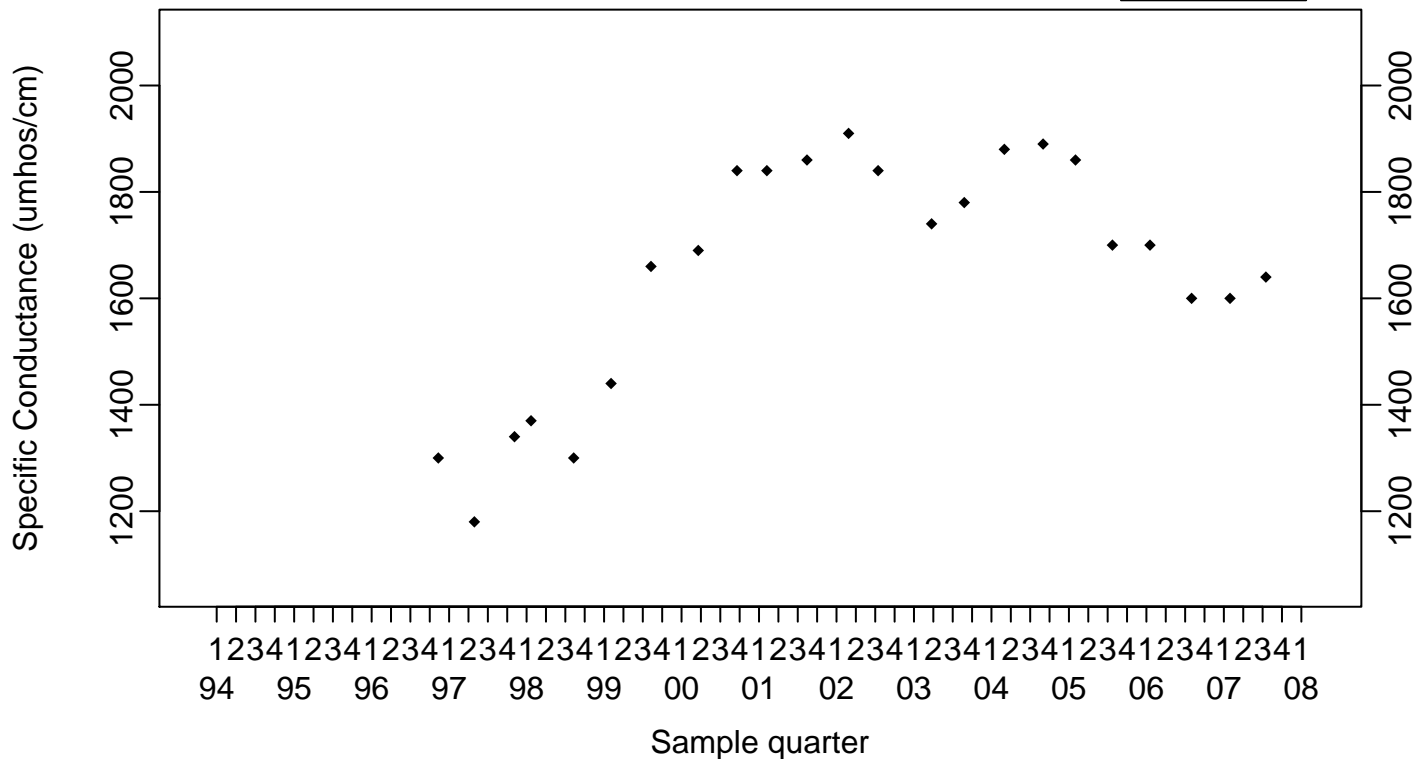
◆ Above RL
▽ Below RL

Crossgradient Monitor Well W-35A-04

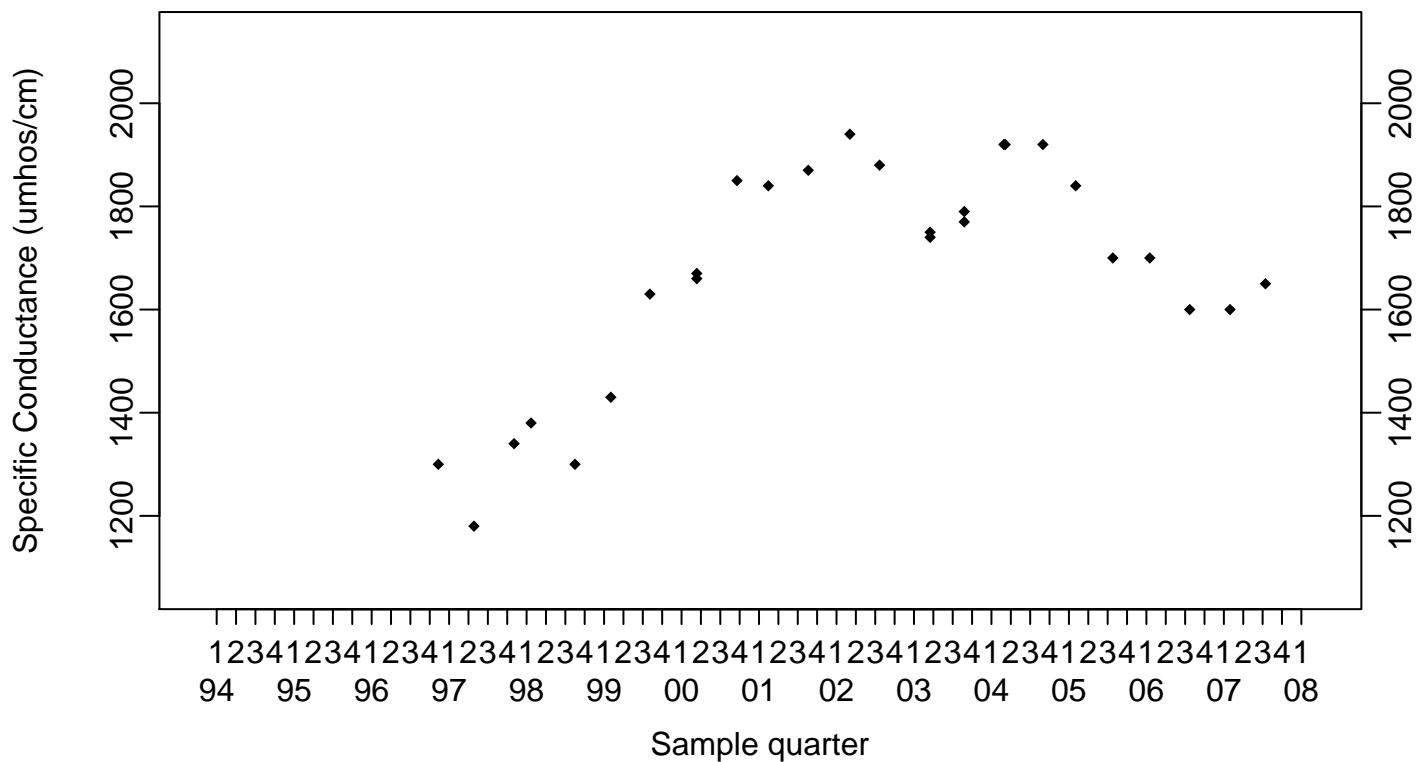


Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

Downgradient Monitor Well W-7DS

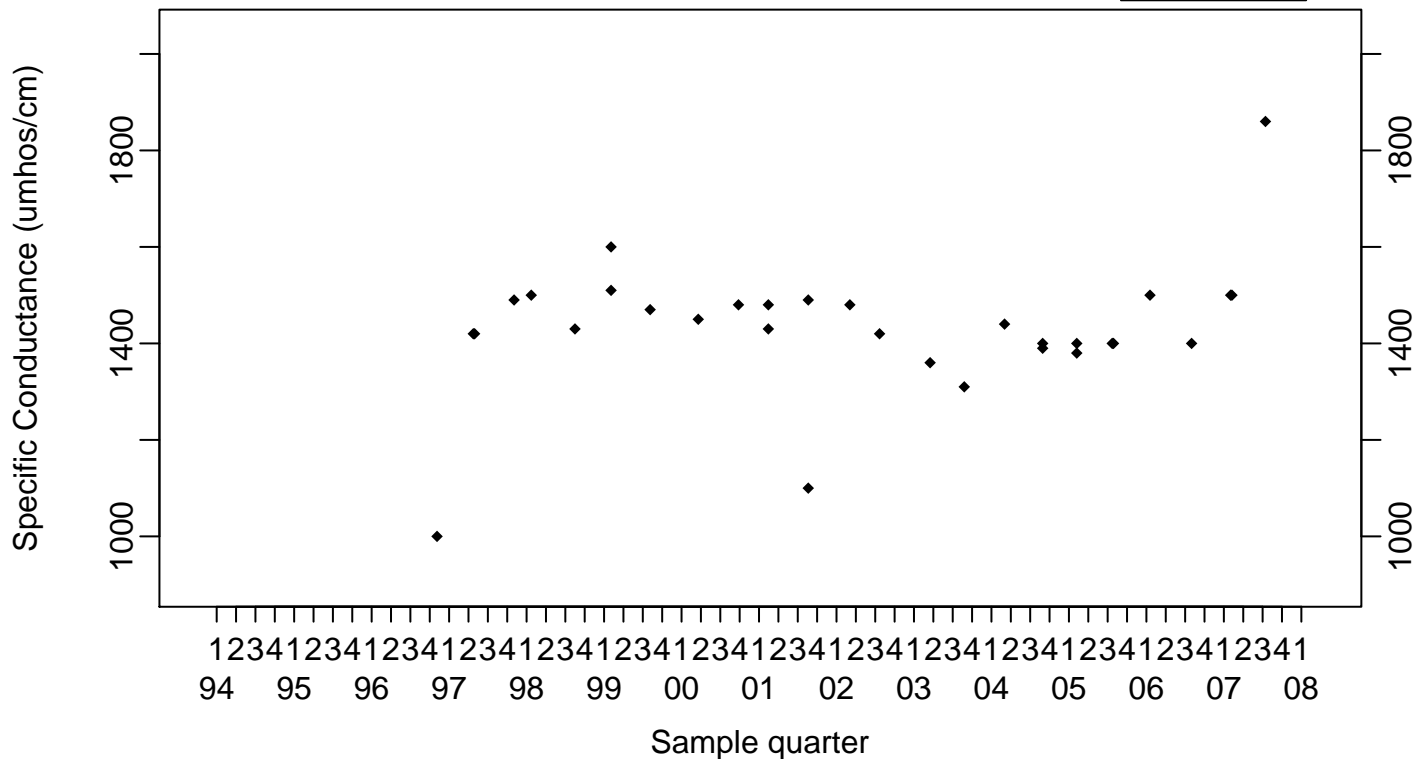
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Downgradient Monitor Well W-25N-20

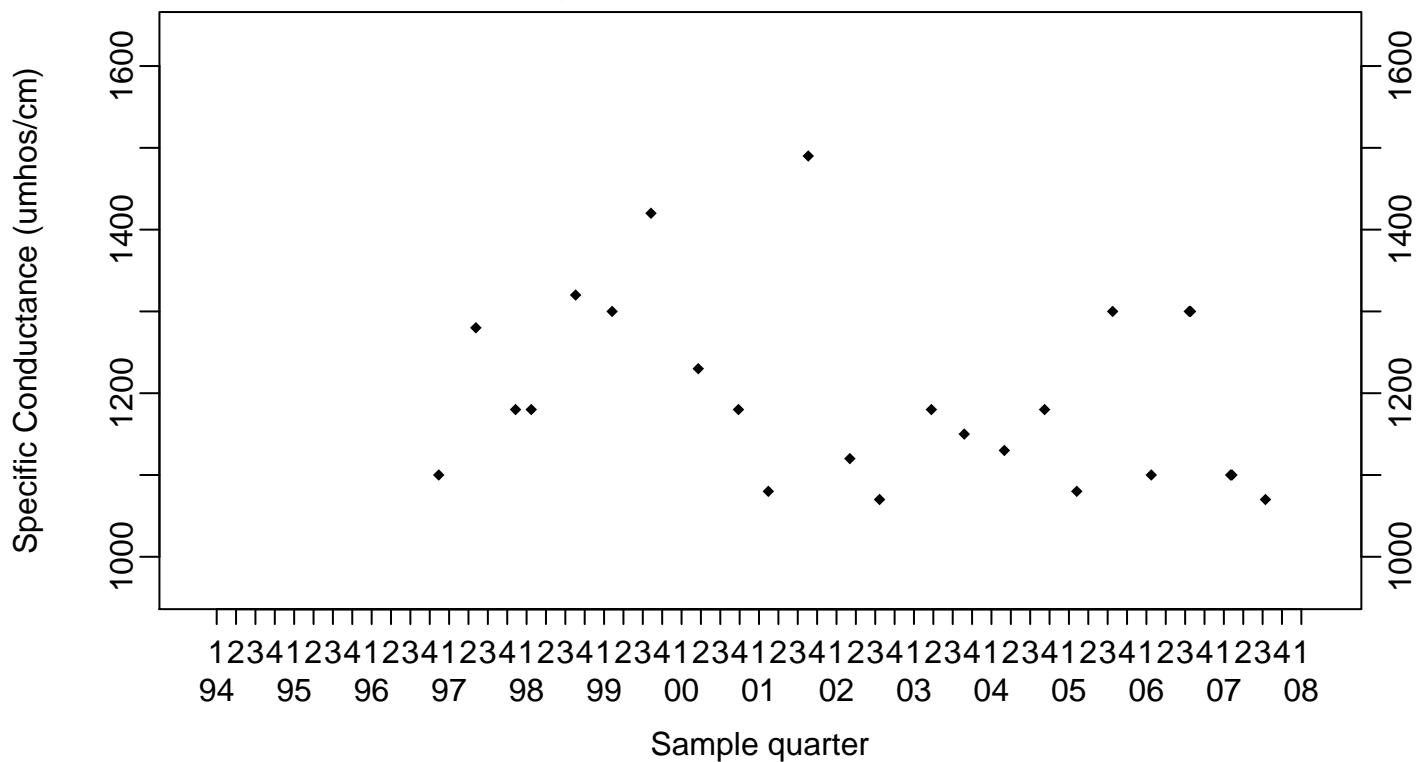


Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

Downgradient Monitor Well W-26R-01

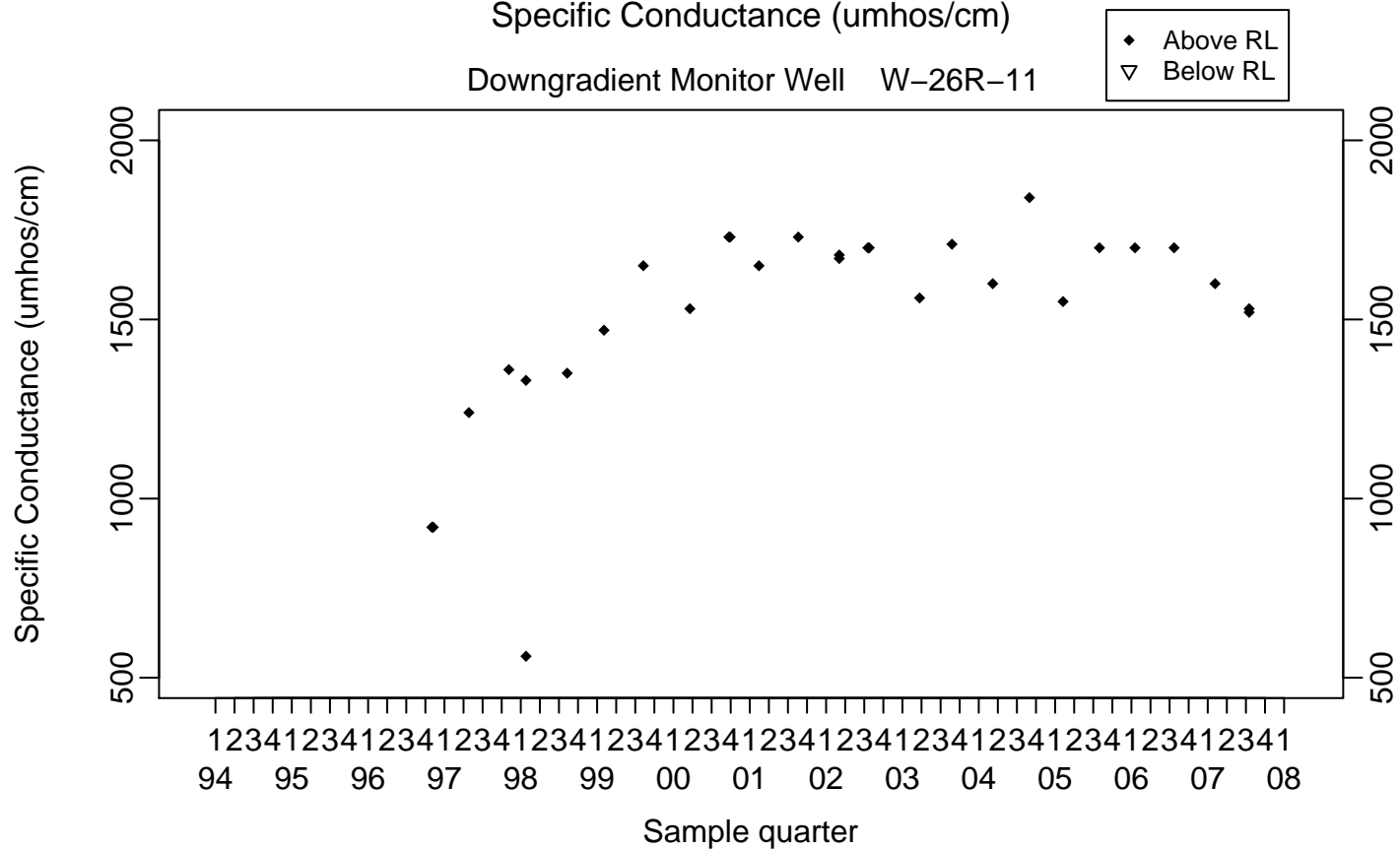
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Downgradient Monitor Well W-26R-05



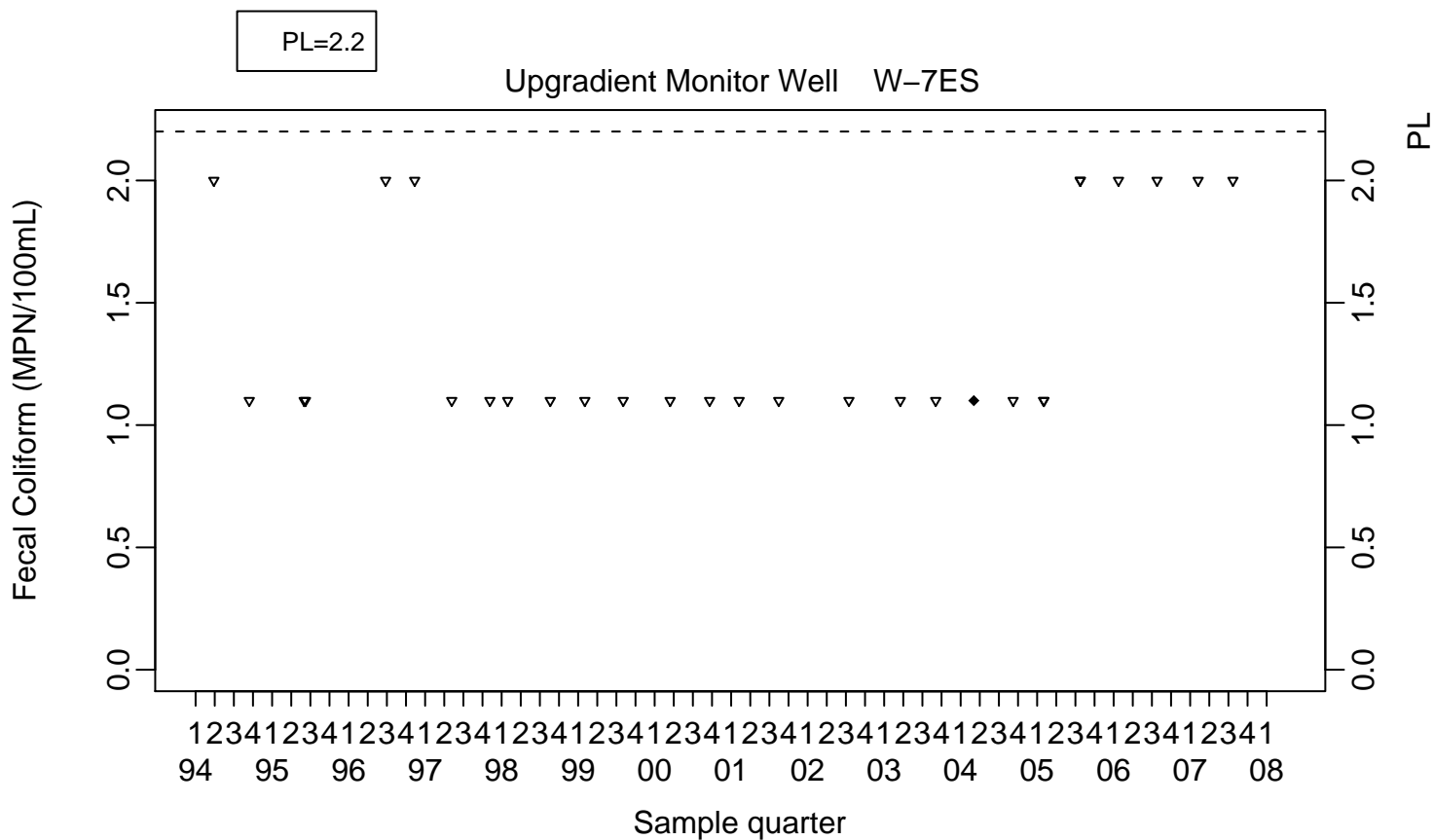
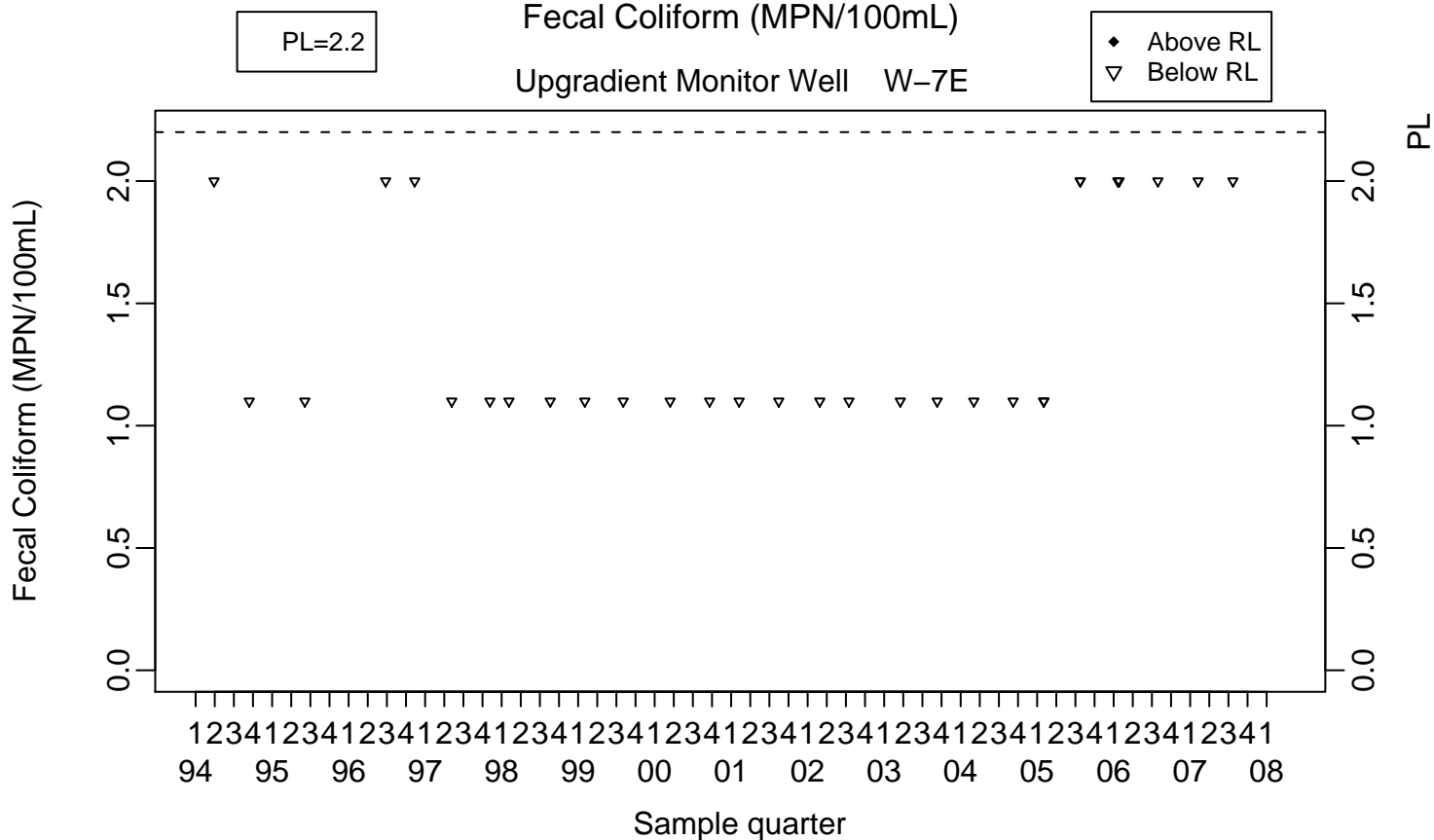
Sewage Ponds Ground Water
Specific Conductance (umhos/cm)

Downgradient Monitor Well W-26R-11



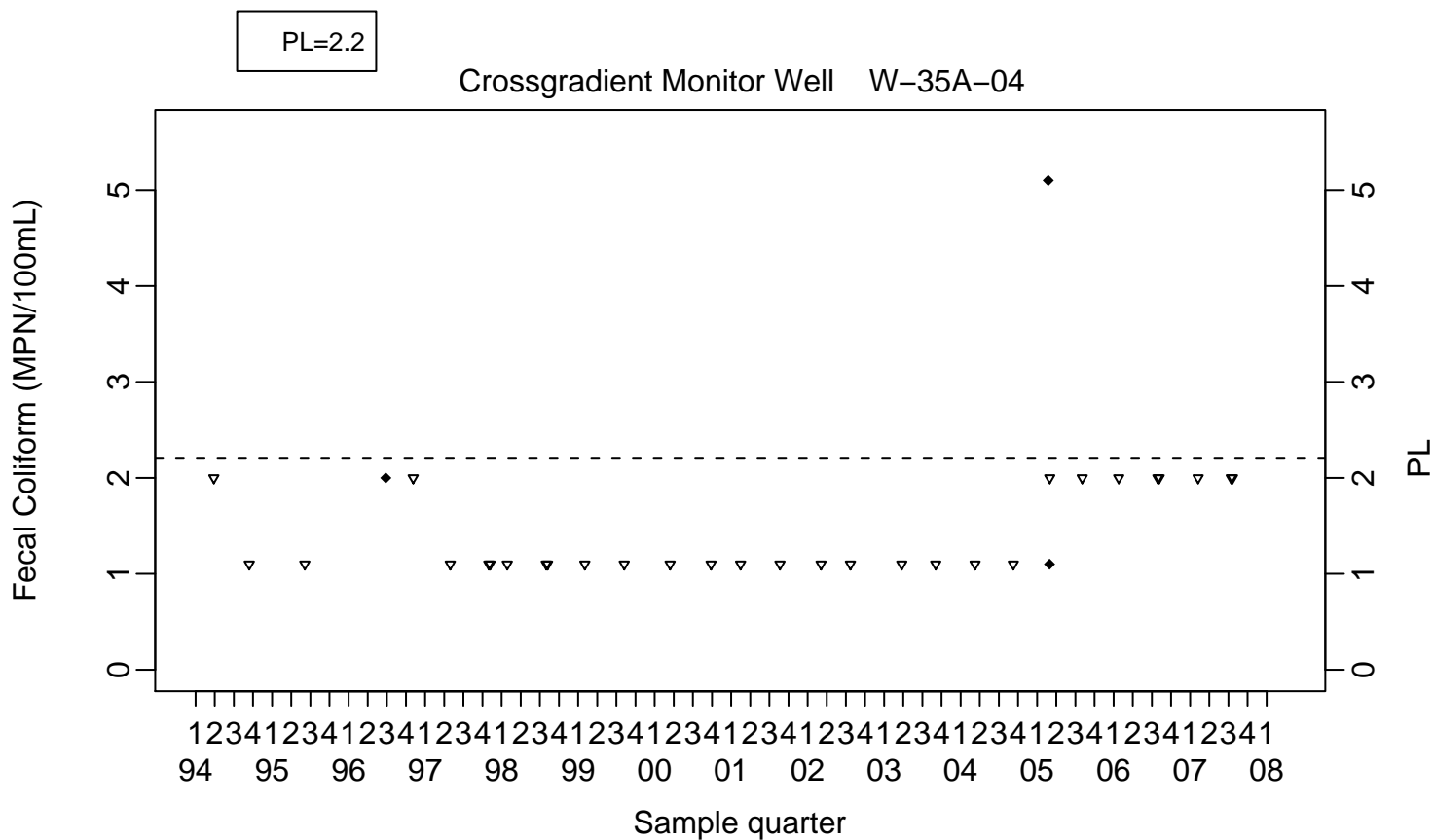
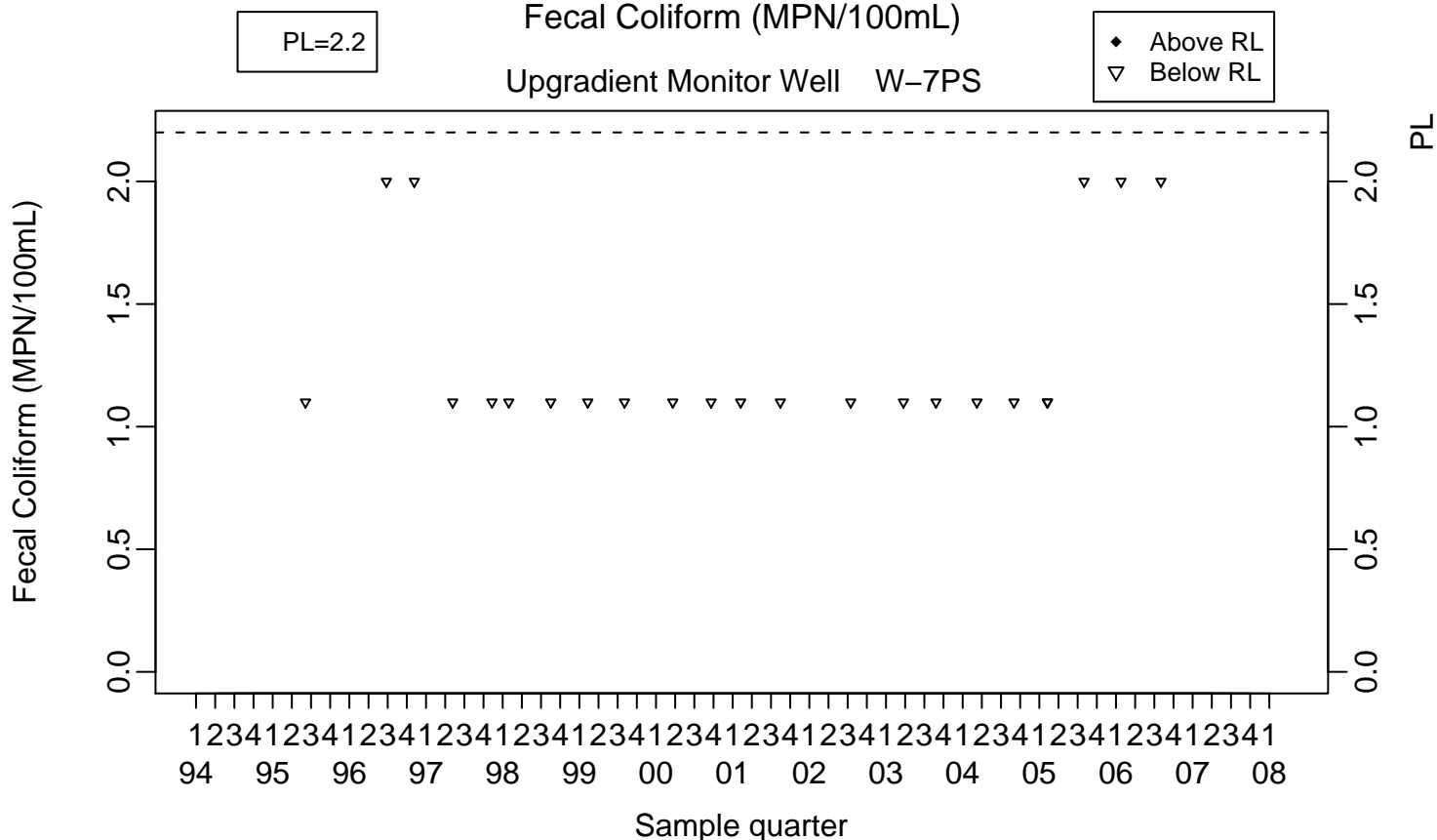
Sewage Ponds Ground Water Fecal Coliform (MPN/100mL)

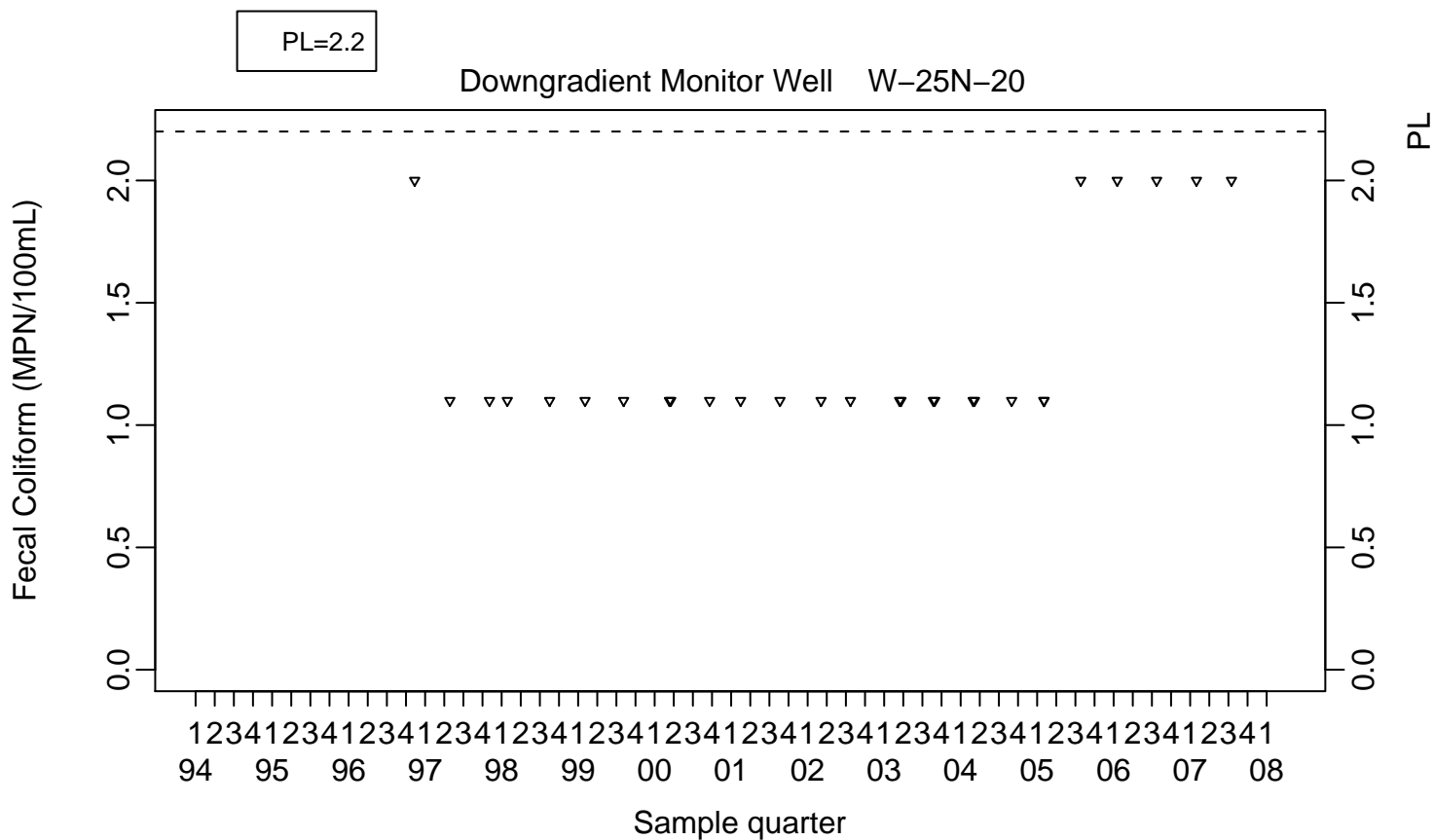
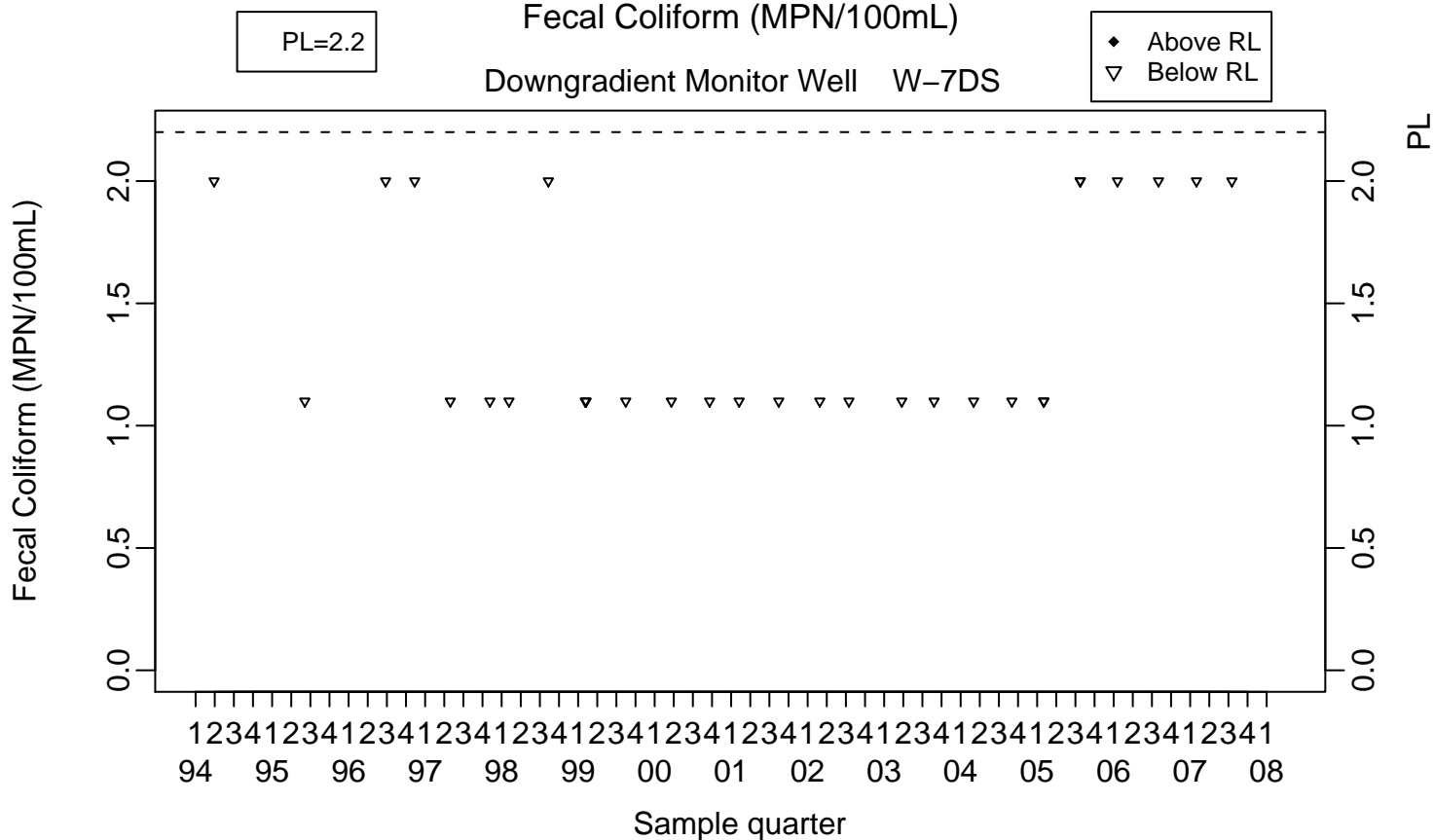
Upgradient Monitor Well W-7E



Sewage Ponds Ground Water Fecal Coliform (MPN/100mL)

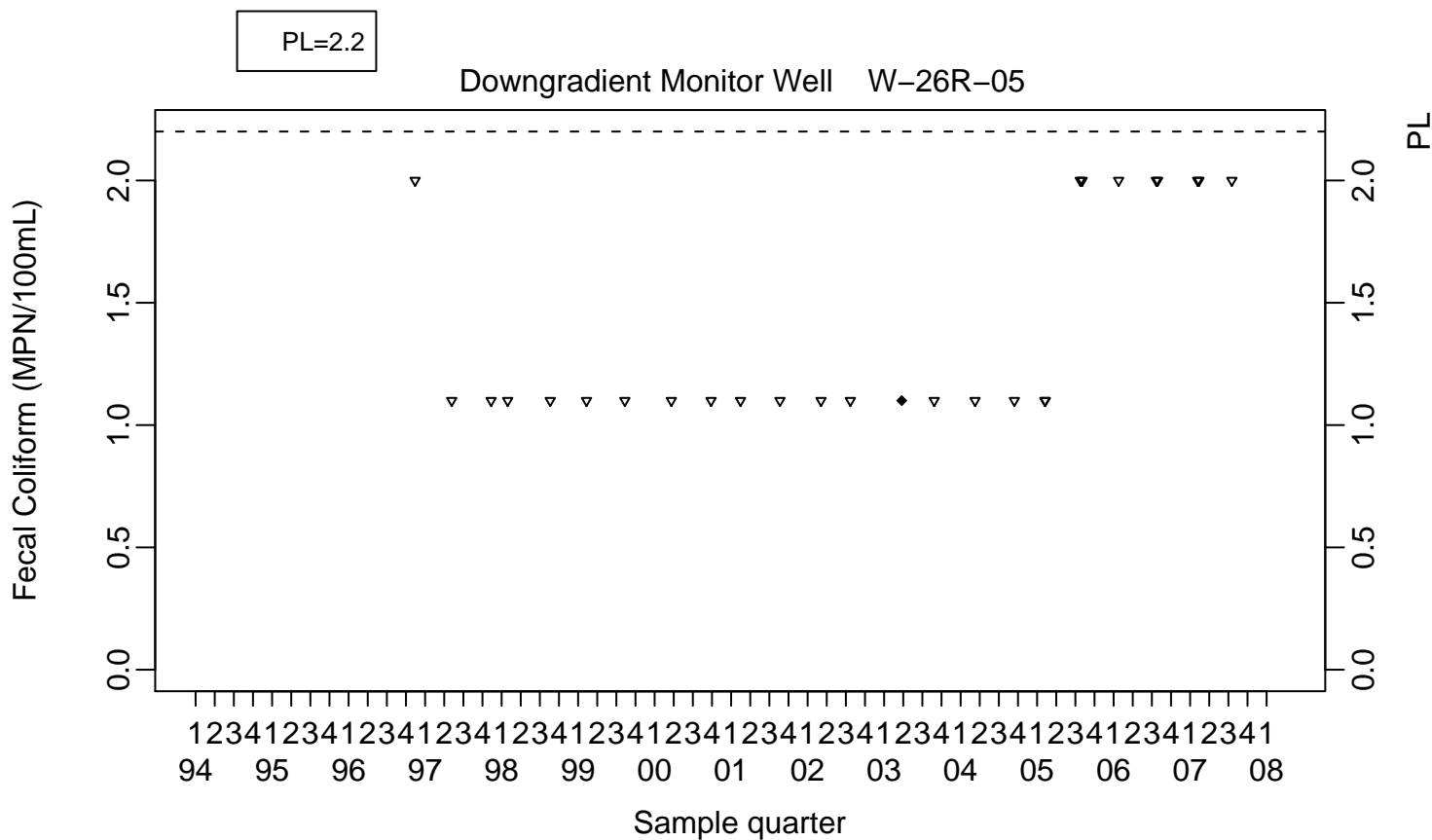
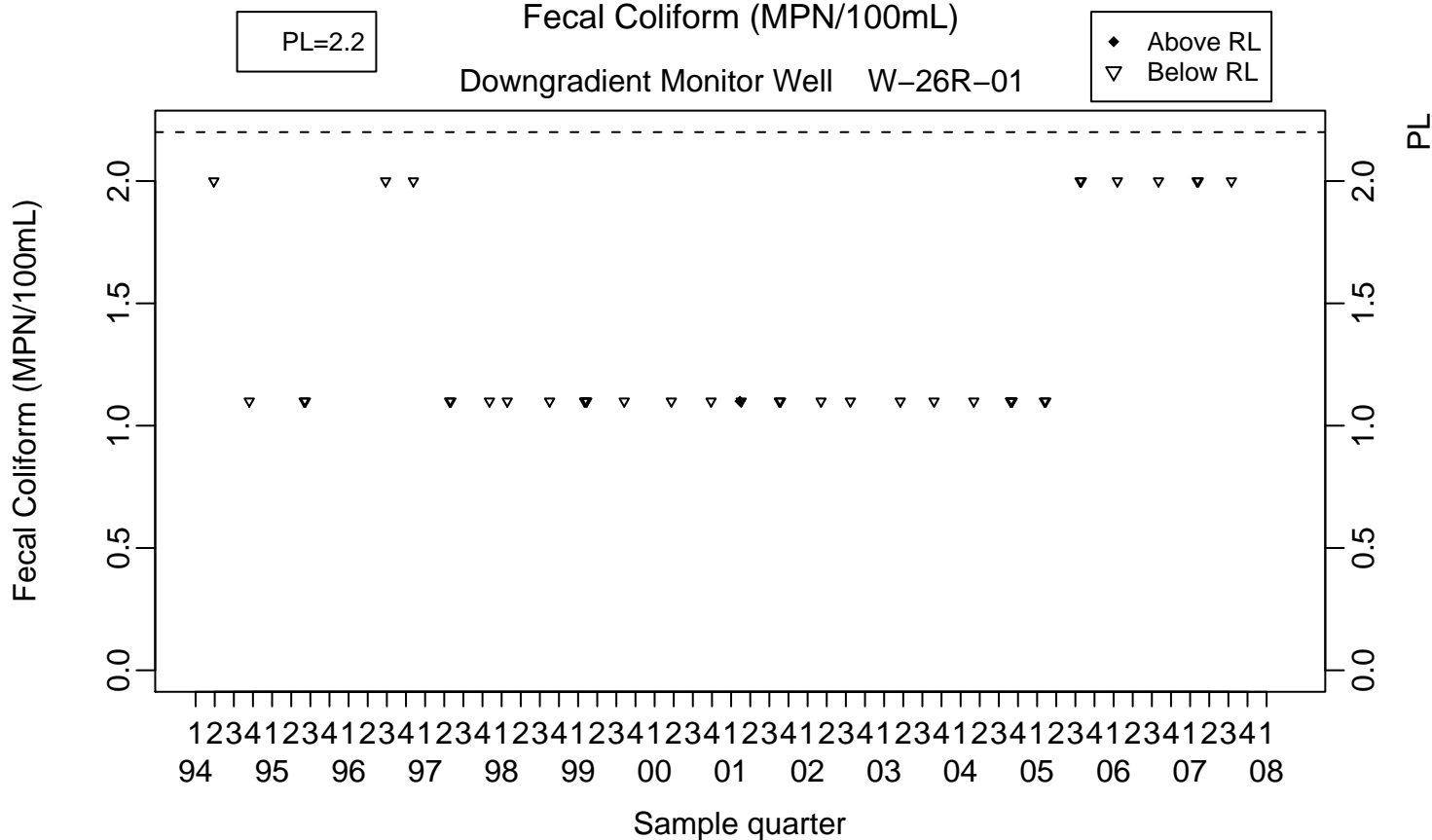
Upgradient Monitor Well W-7PS

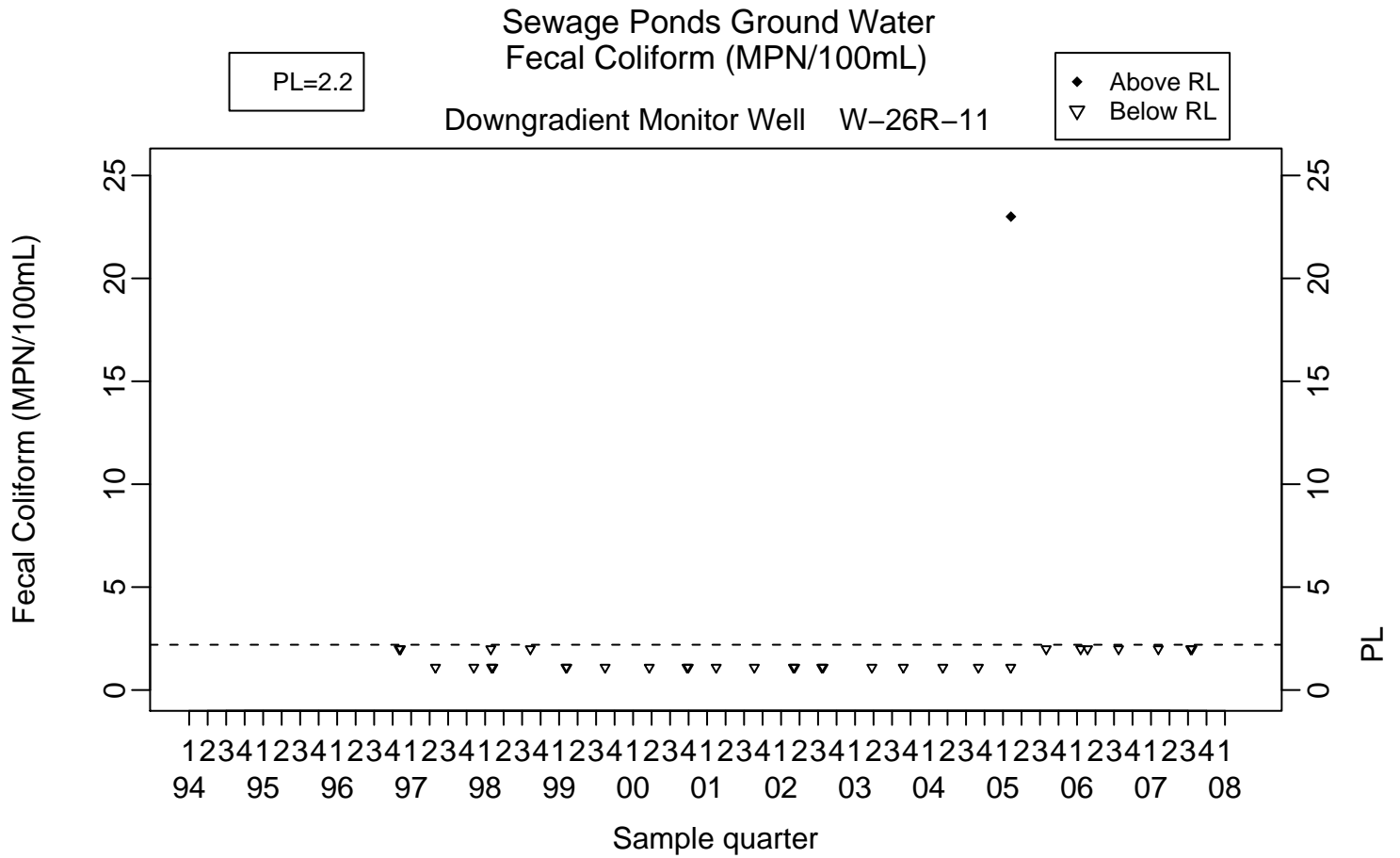


Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)

Sewage Ponds Ground Water
Fecal Coliform (MPN/100mL)

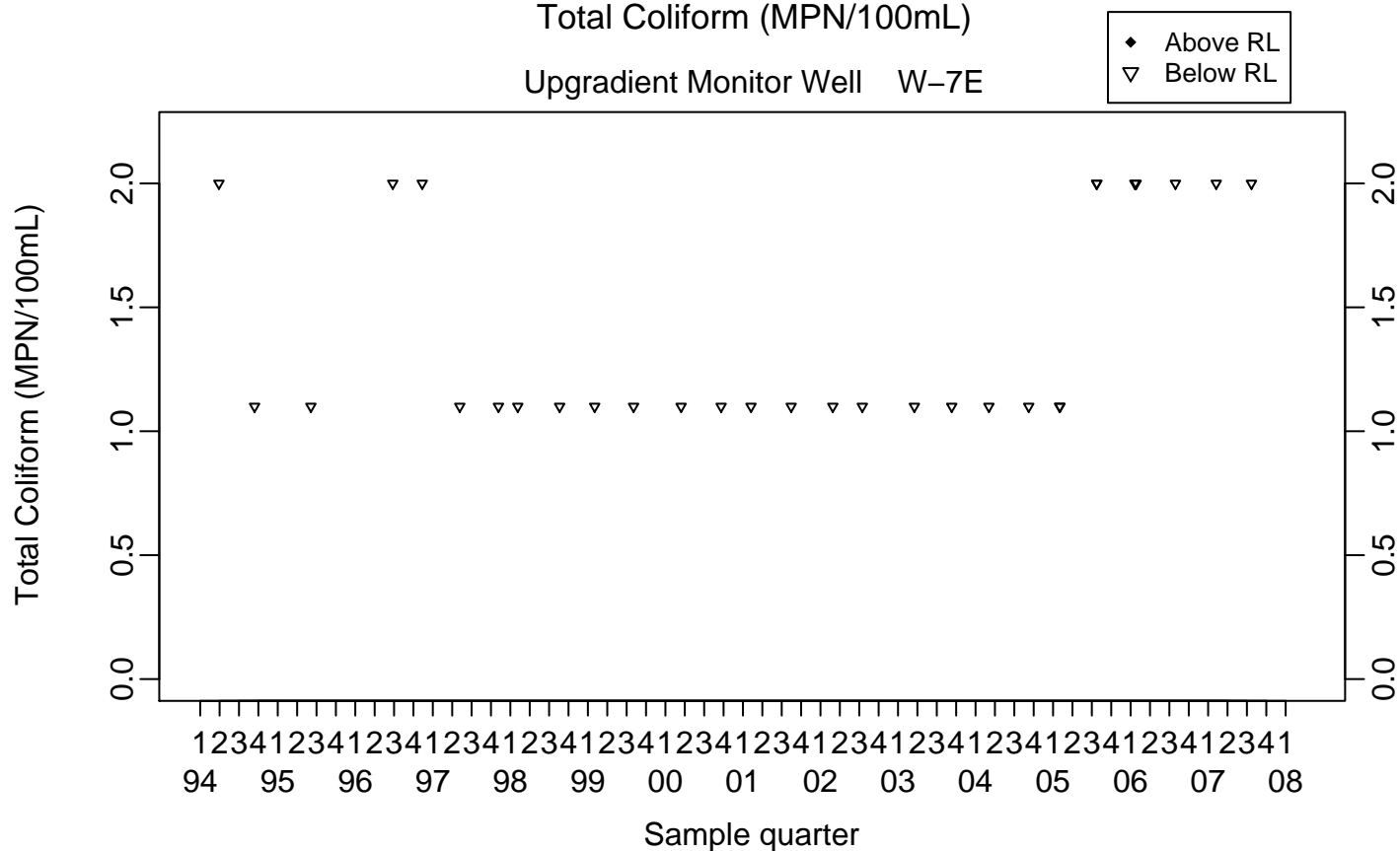
Downgradient Monitor Well W-26R-01



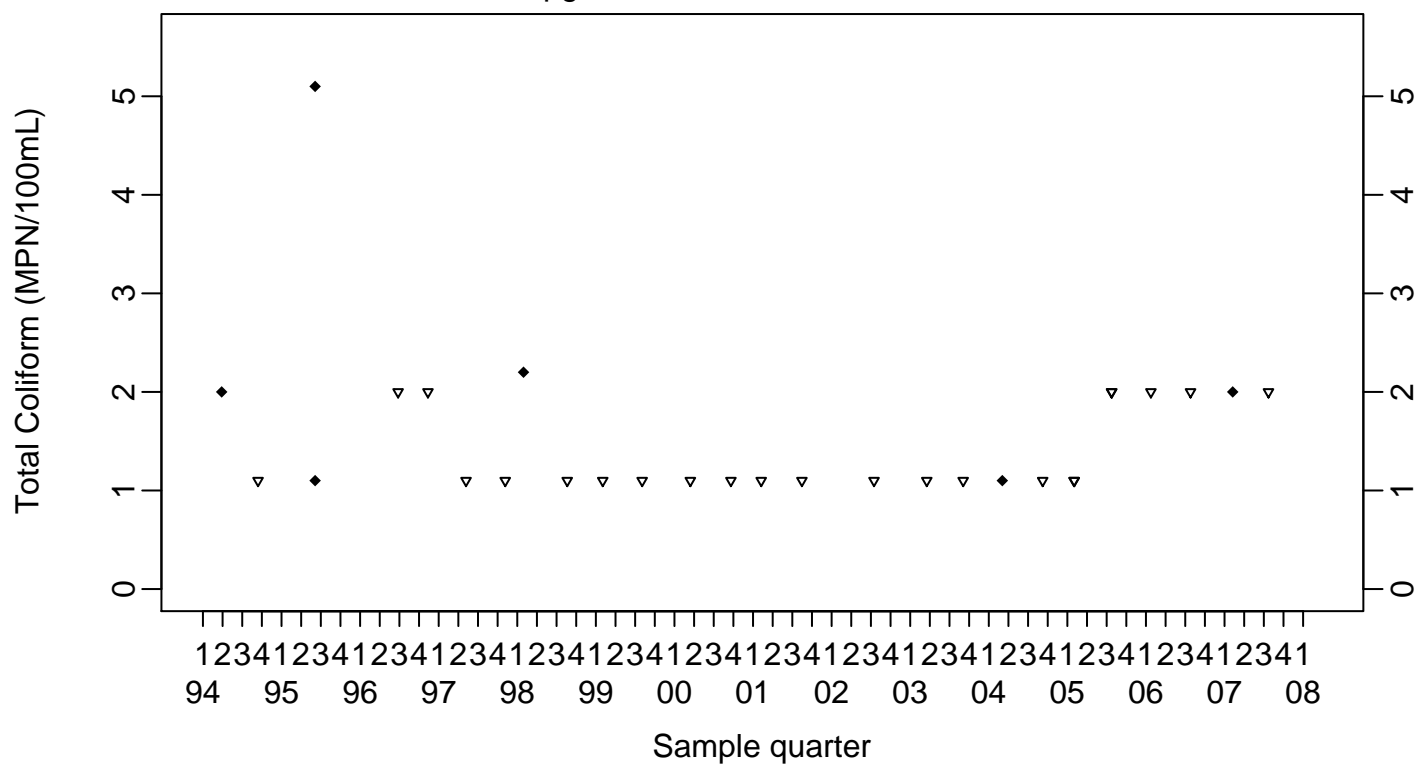


Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

Upgradient Monitor Well W-7E

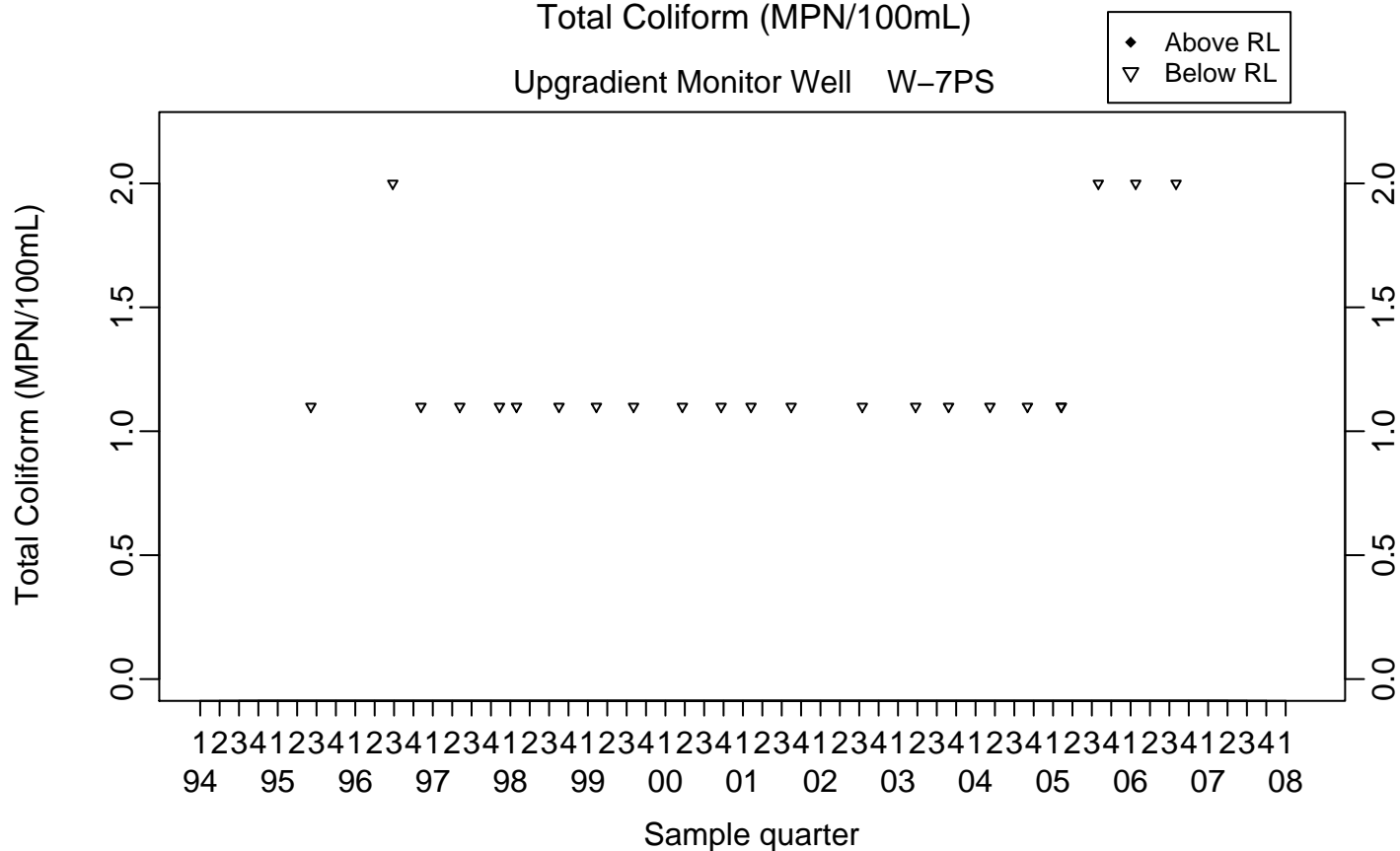


Upgradient Monitor Well W-7ES

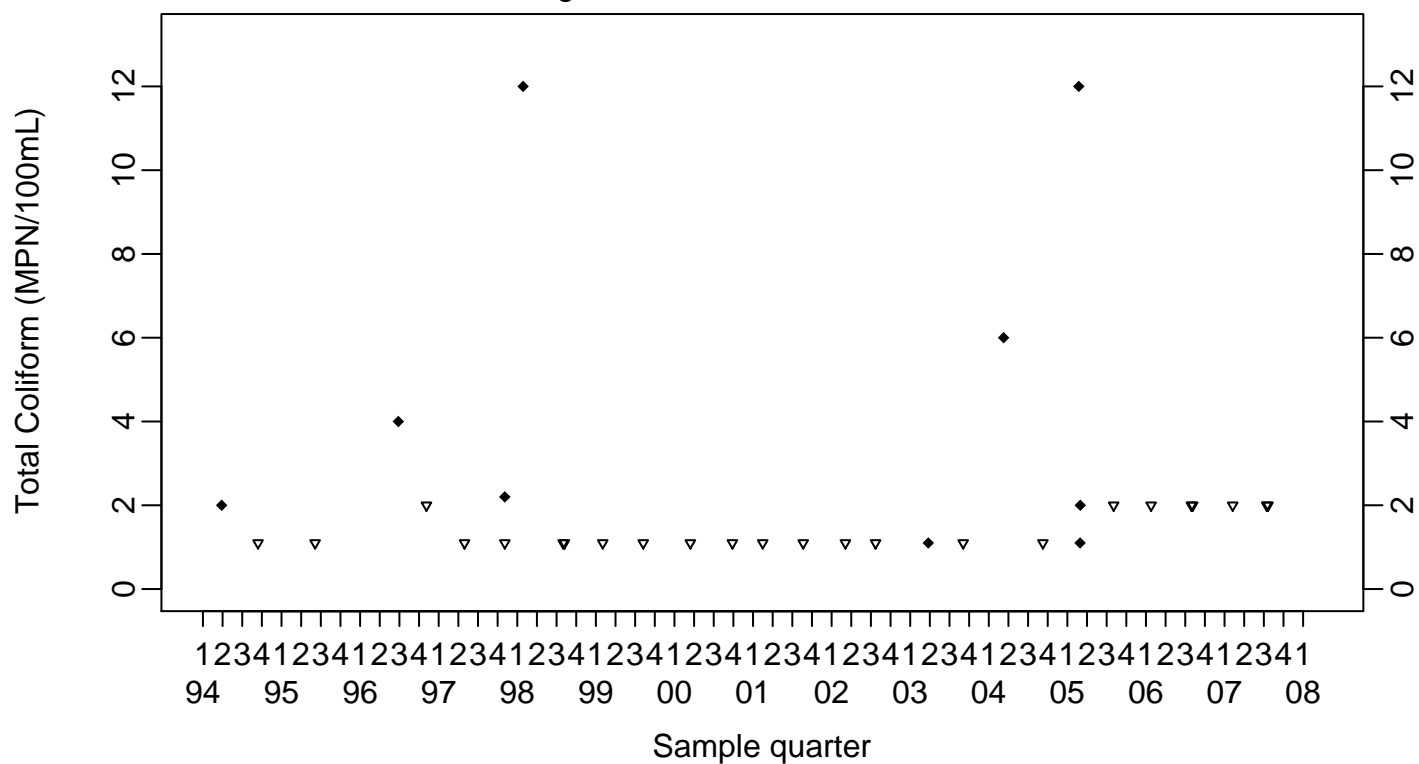


Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

Upgradient Monitor Well W-7PS

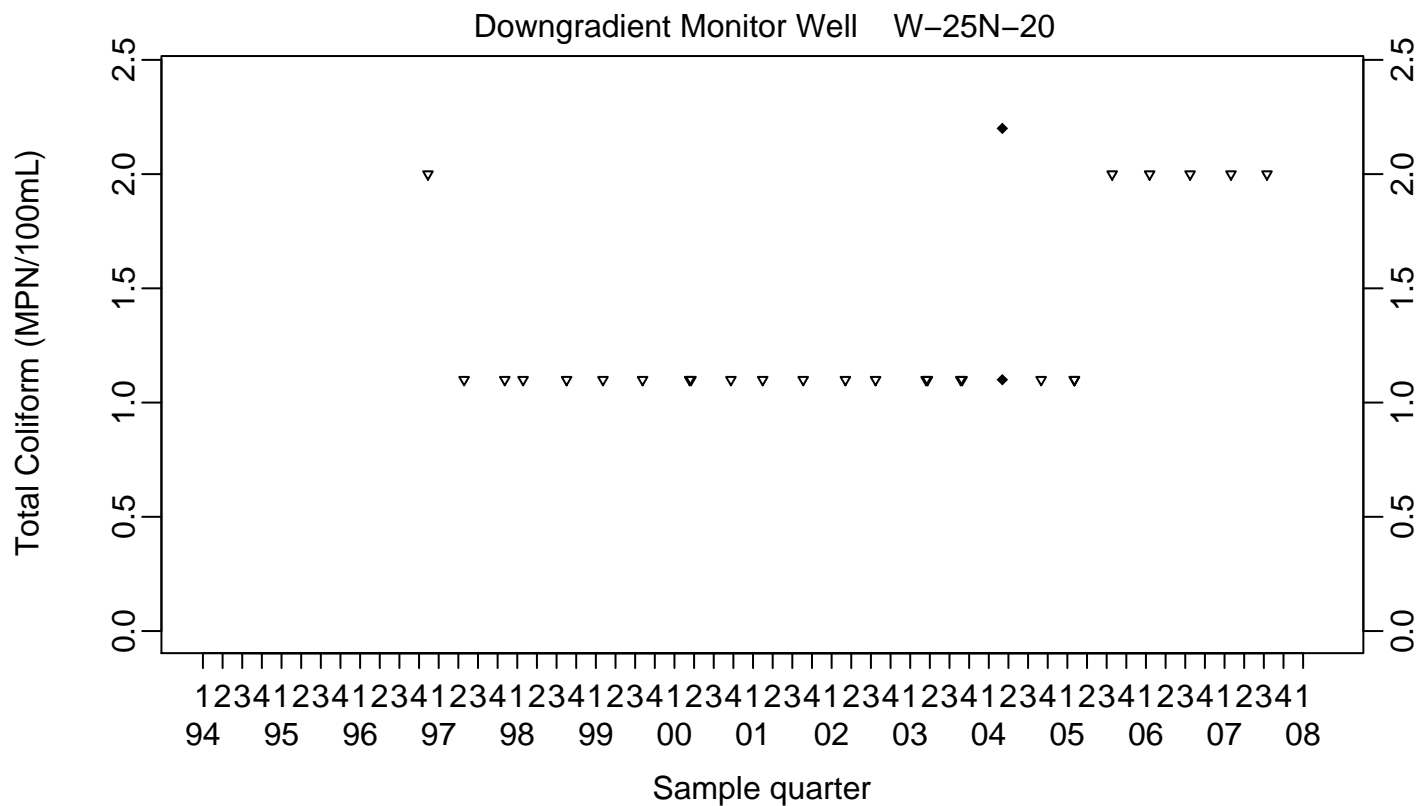
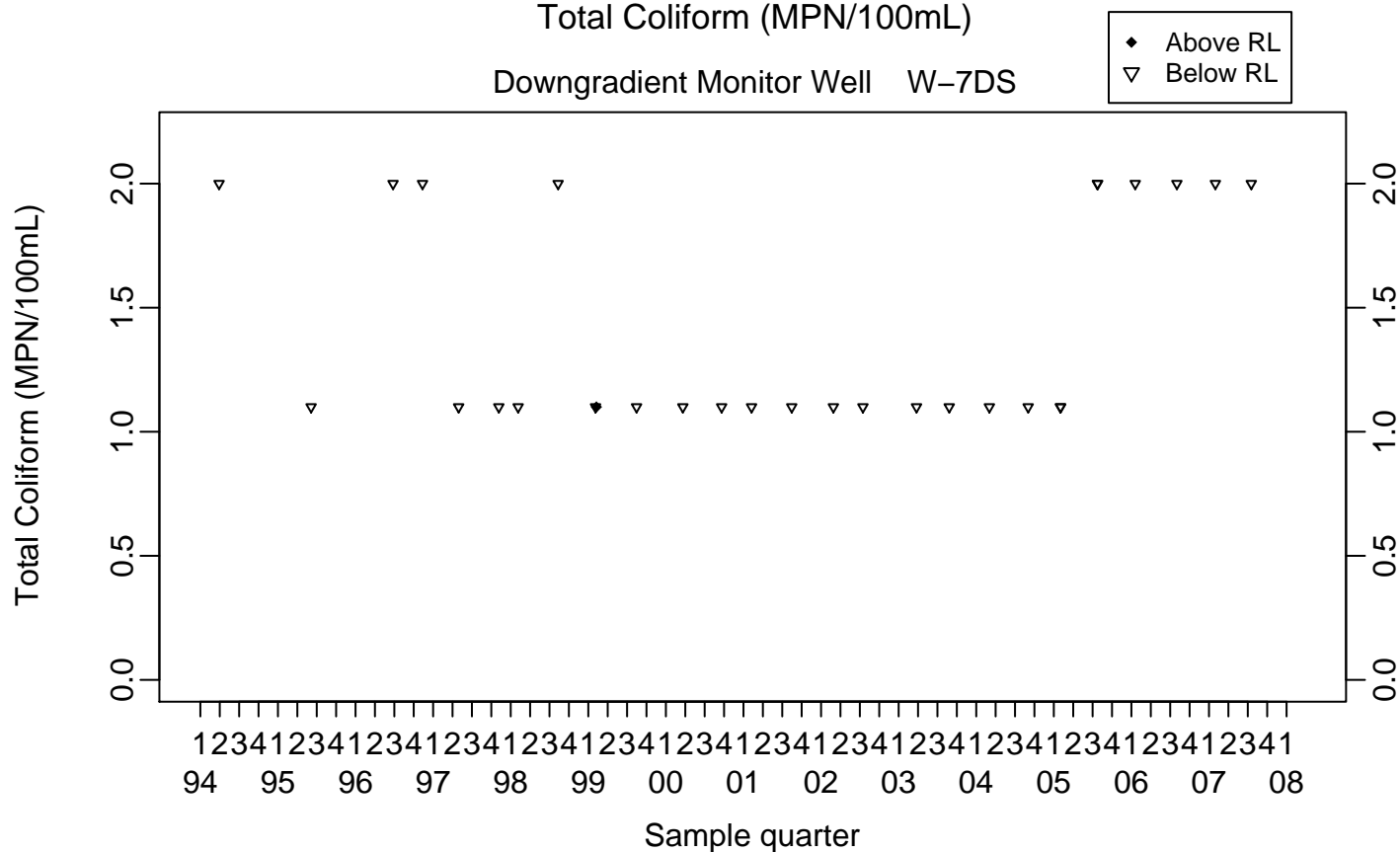


Crossgradient Monitor Well W-35A-04



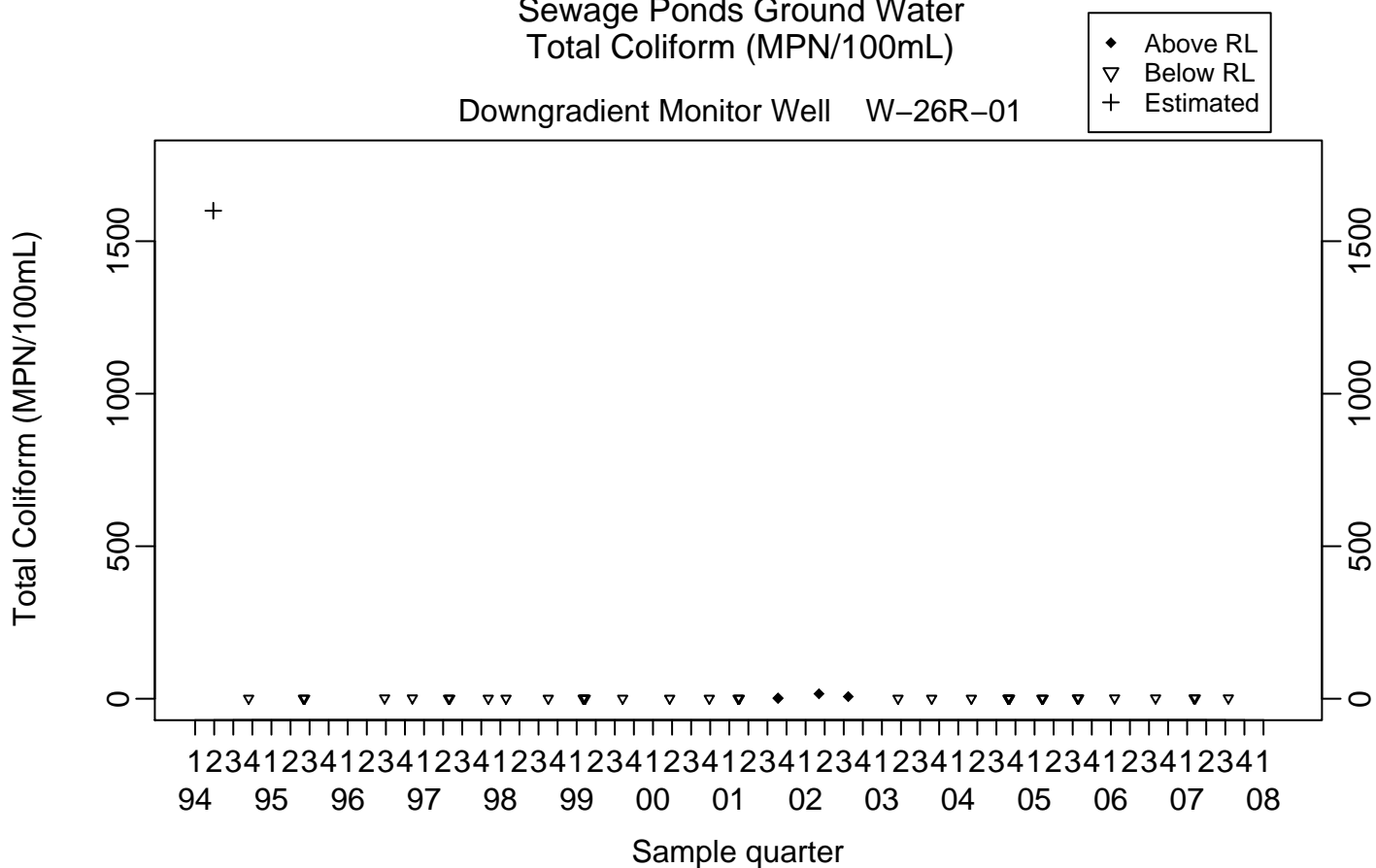
Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

Downgradient Monitor Well W-7DS

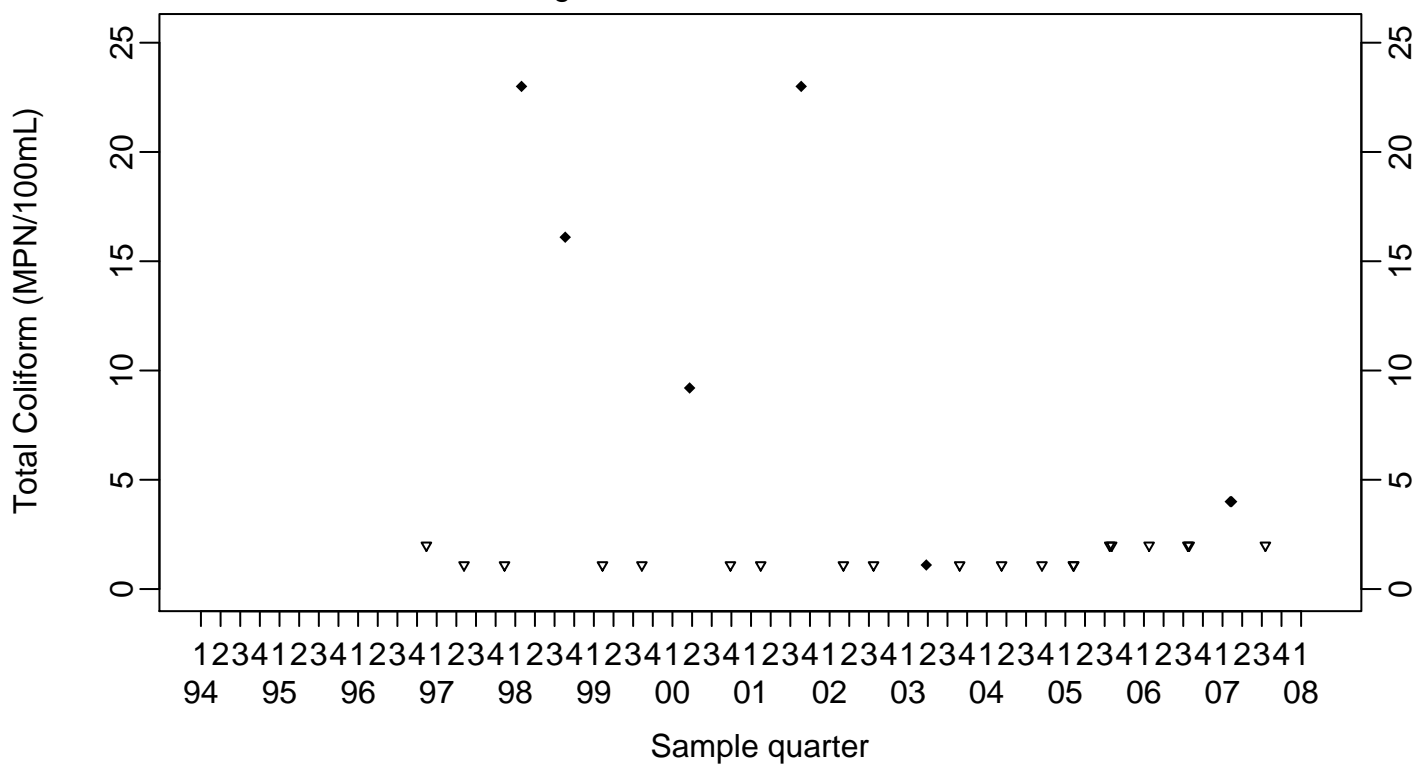


Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

Downgradient Monitor Well W-26R-01

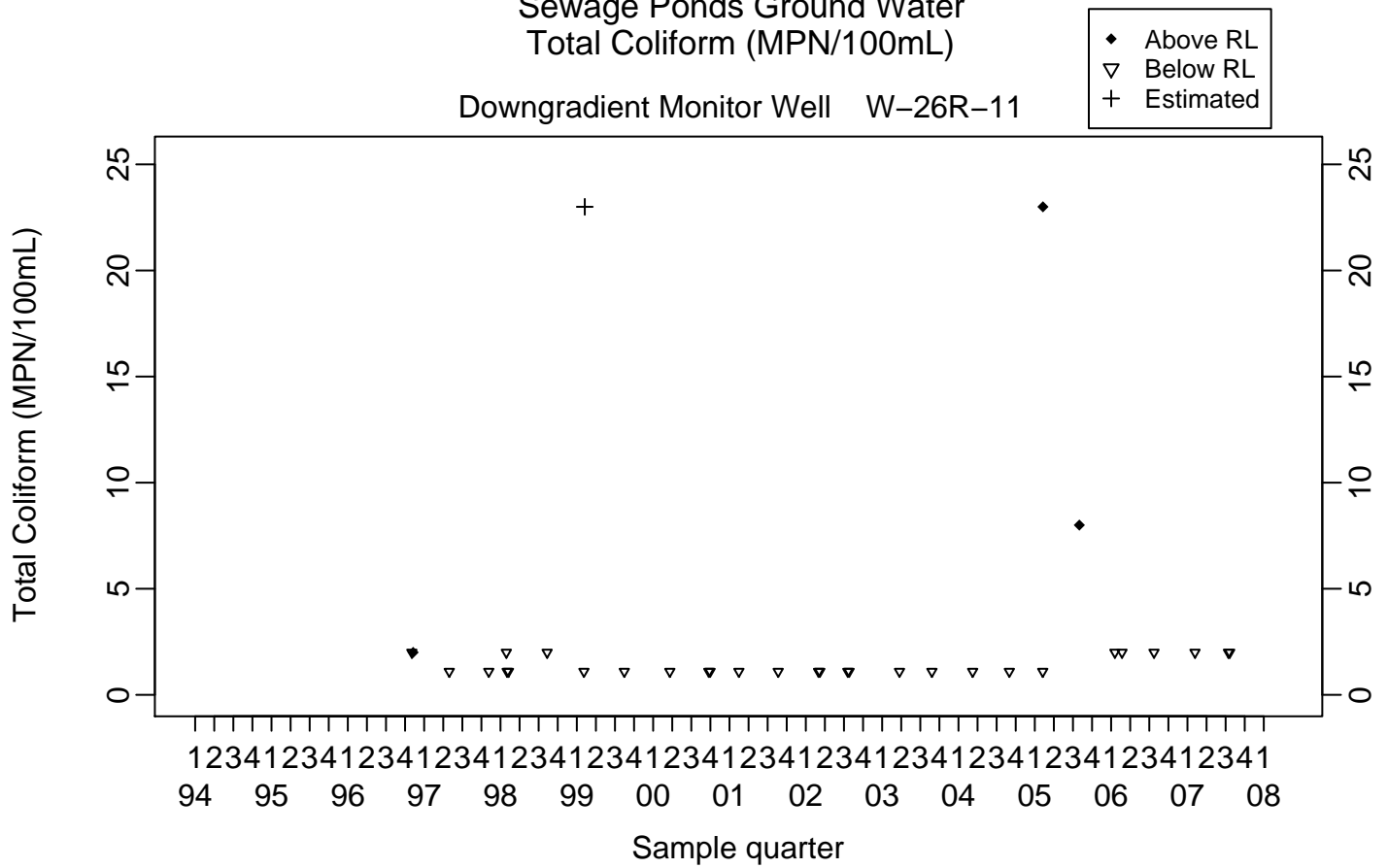


Downgradient Monitor Well W-26R-05



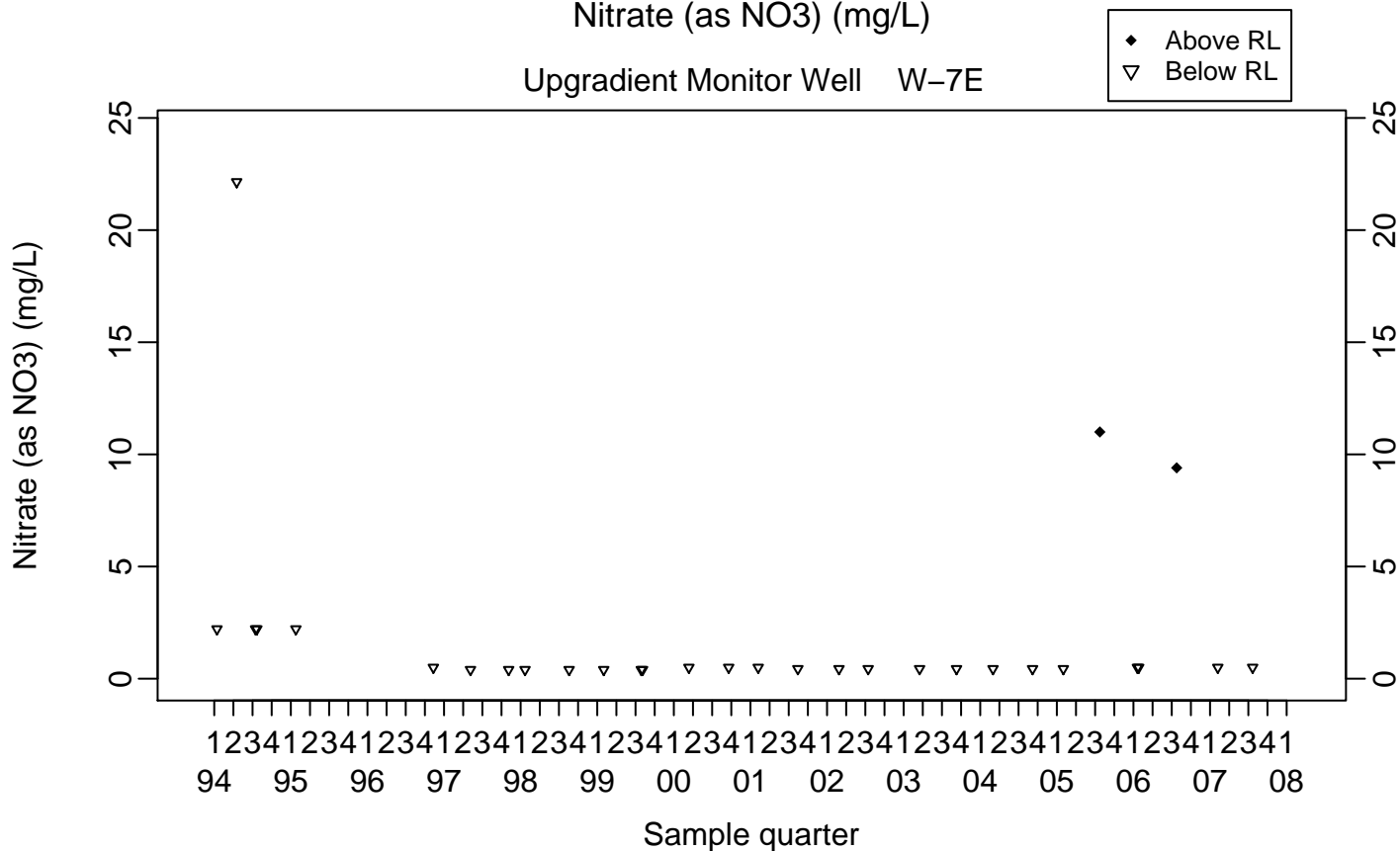
Sewage Ponds Ground Water
Total Coliform (MPN/100mL)

Downgradient Monitor Well W-26R-11

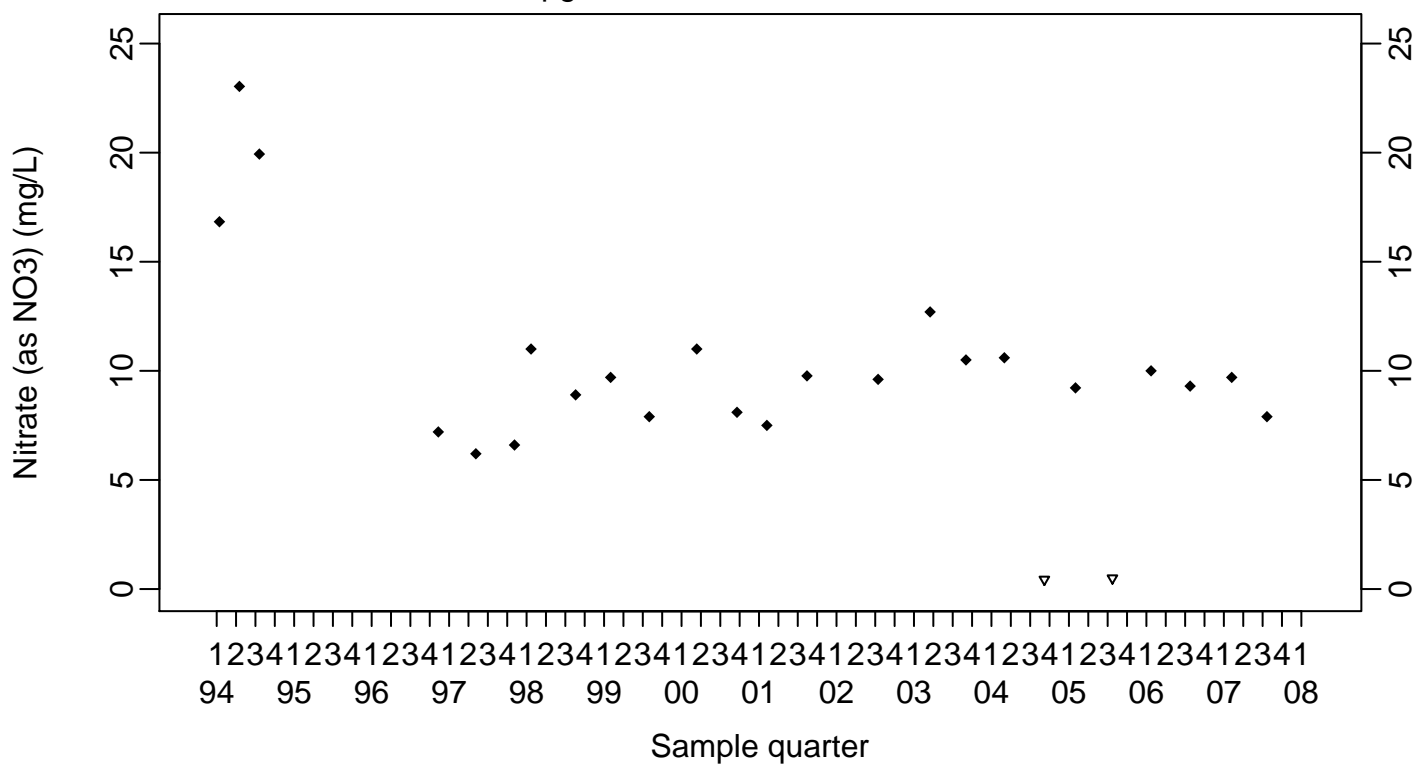


Sewage Ponds Ground Water
Nitrate (as NO₃) (mg/L)

Upgradient Monitor Well W-7E

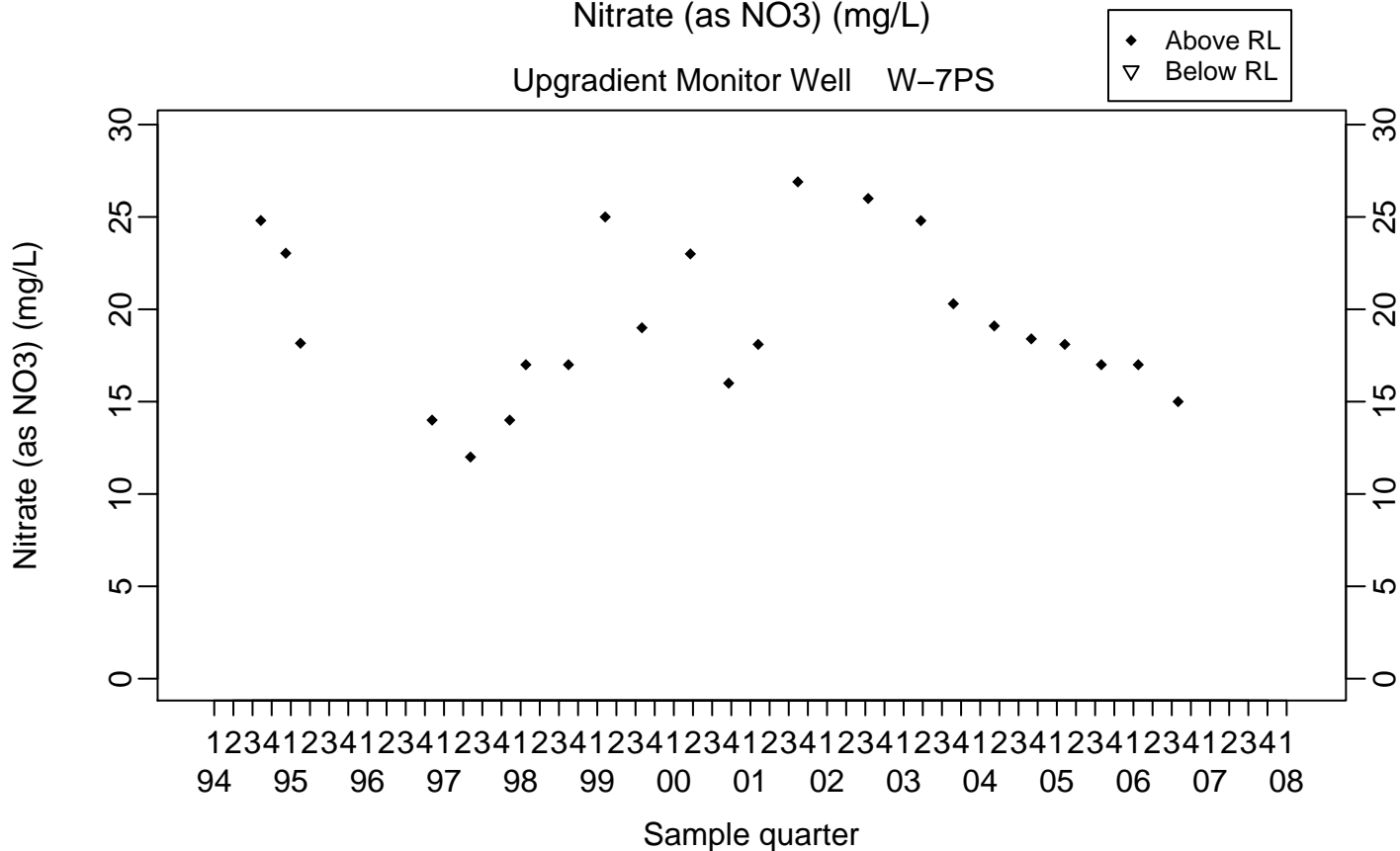


Upgradient Monitor Well W-7ES

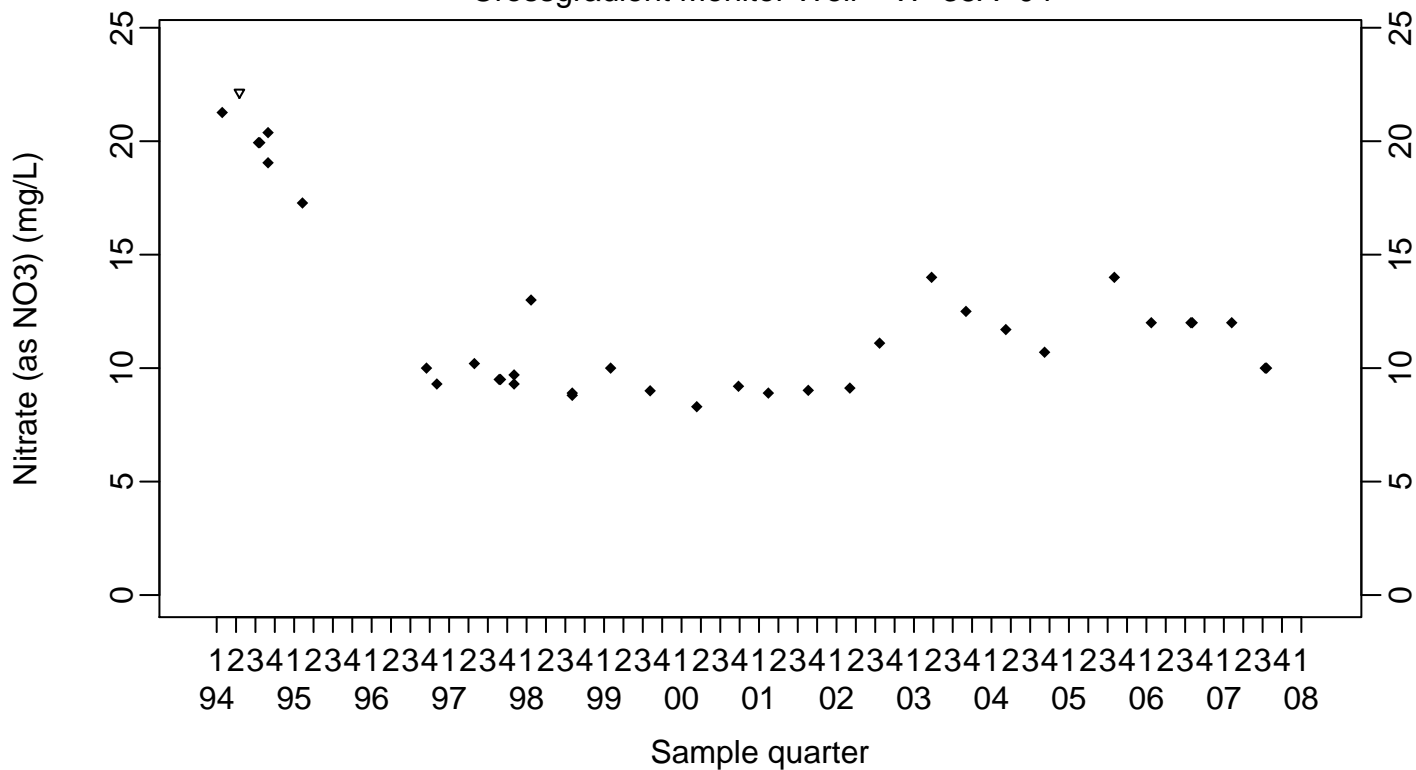


Sewage Ponds Ground Water
Nitrate (as NO₃) (mg/L)

Upgradient Monitor Well W-7PS

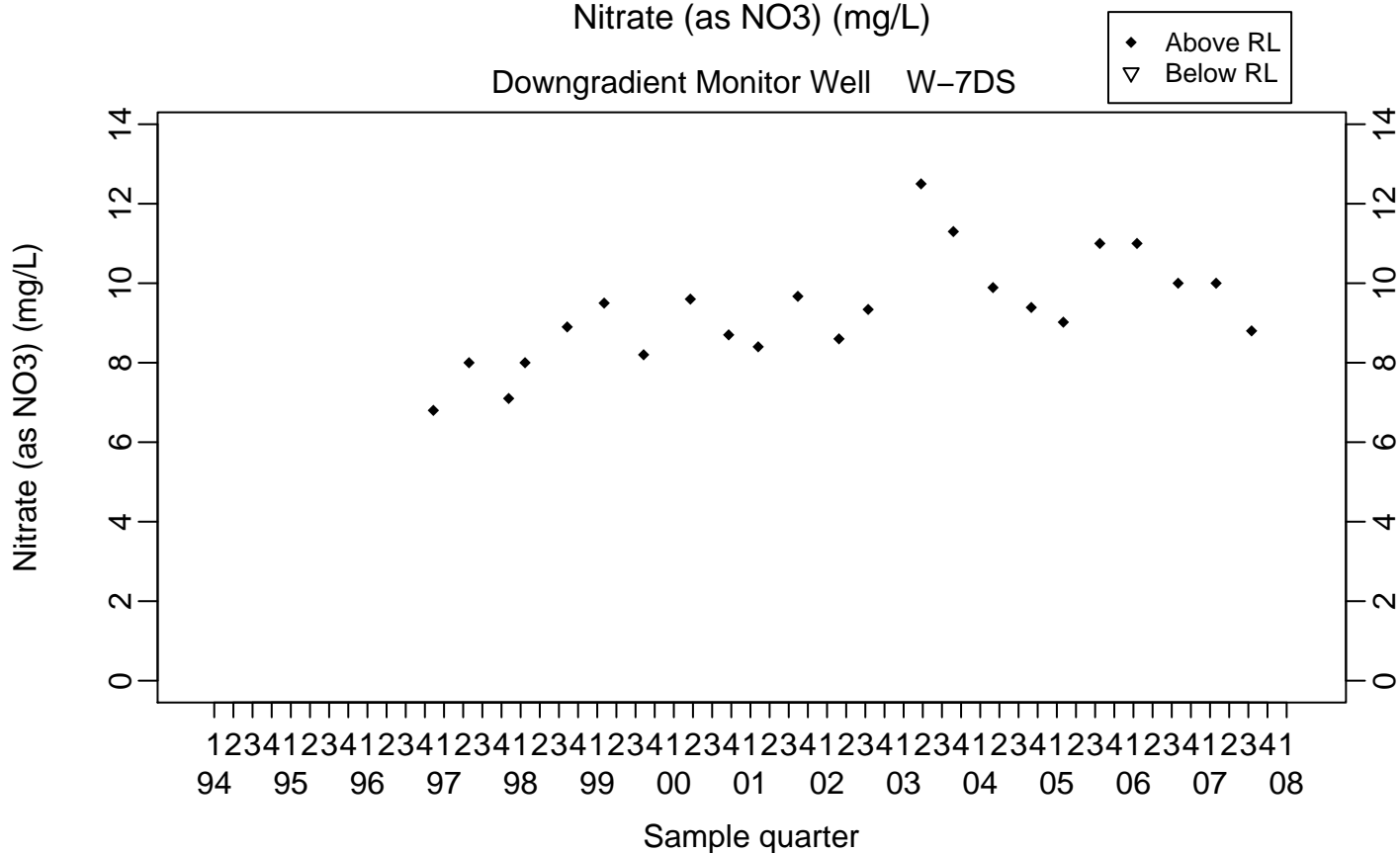


Crossgradient Monitor Well W-35A-04

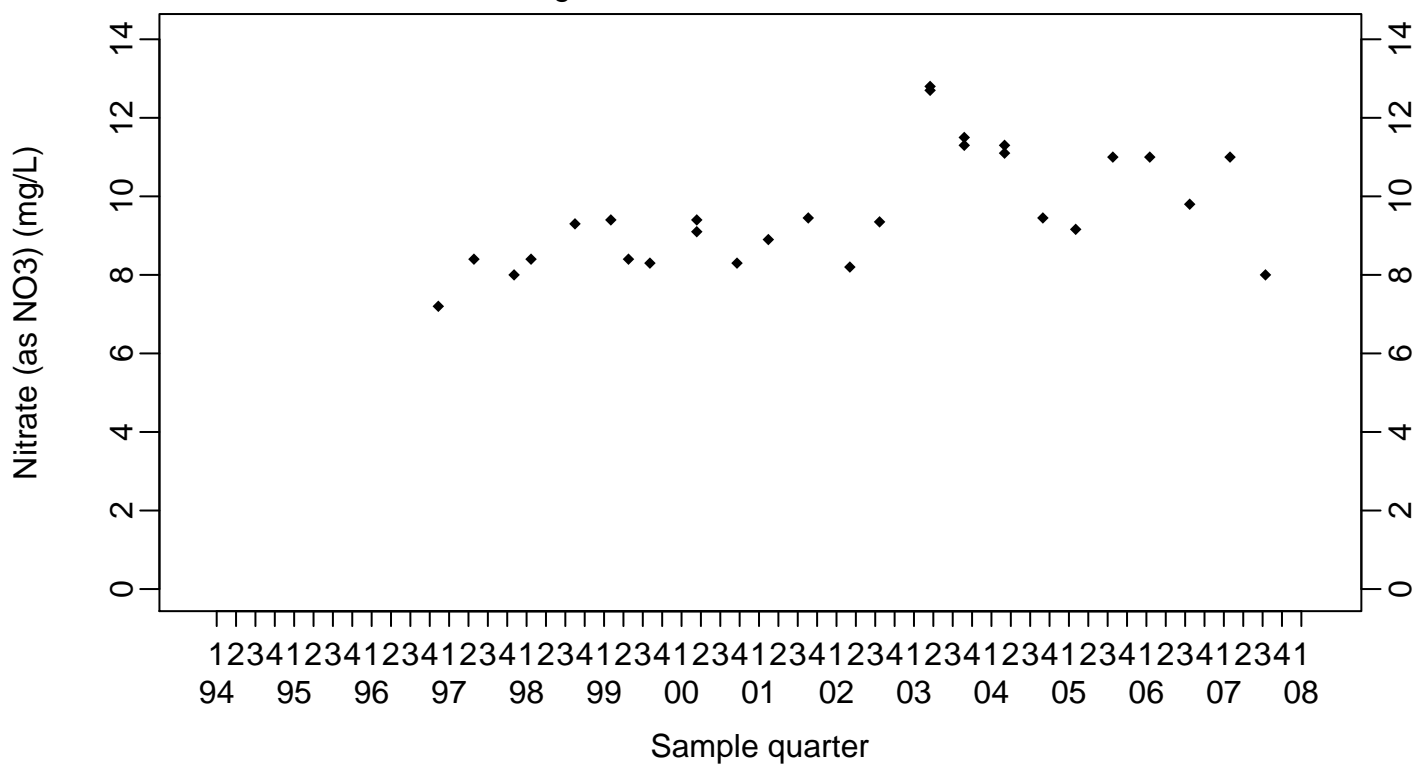


Sewage Ponds Ground Water
Nitrate (as NO₃) (mg/L)

Downgradient Monitor Well W-7DS

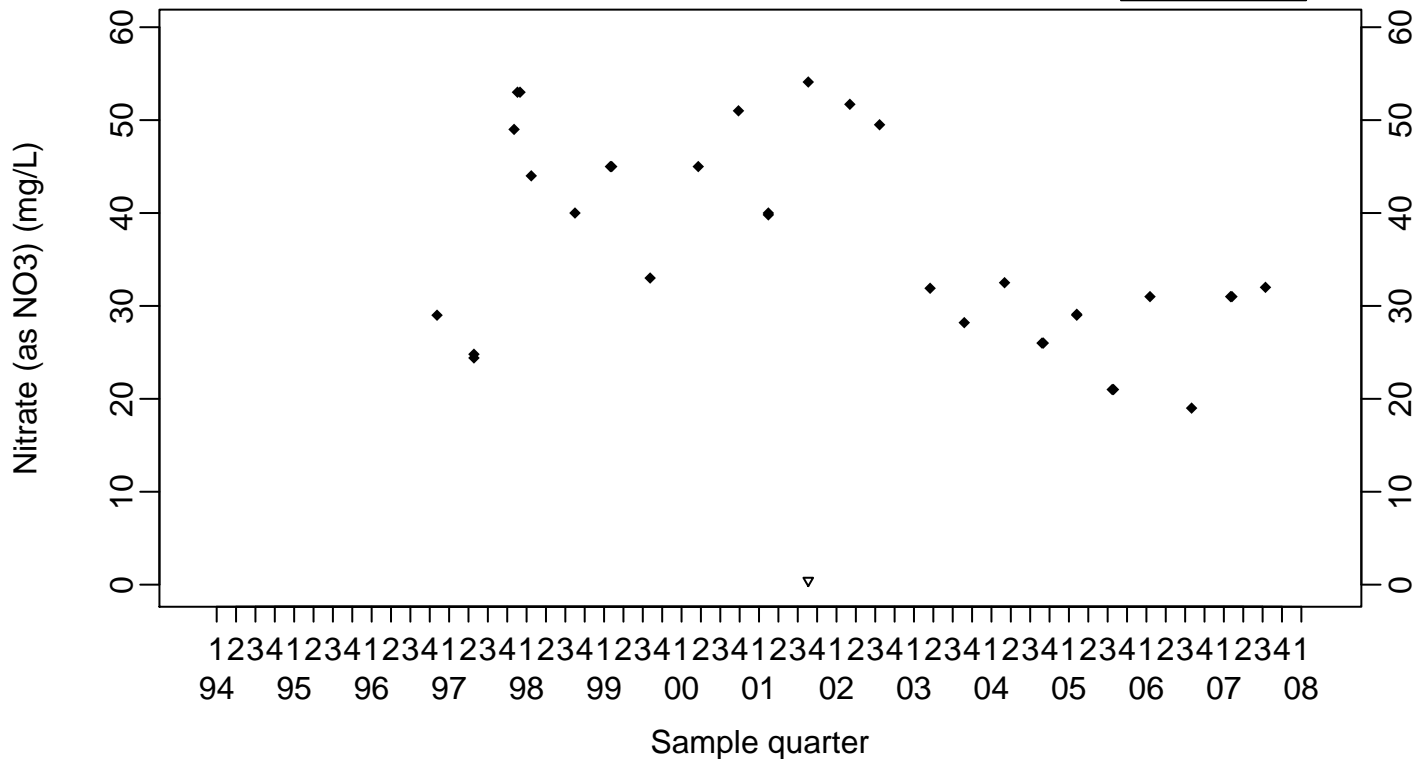


Downgradient Monitor Well W-25N-20

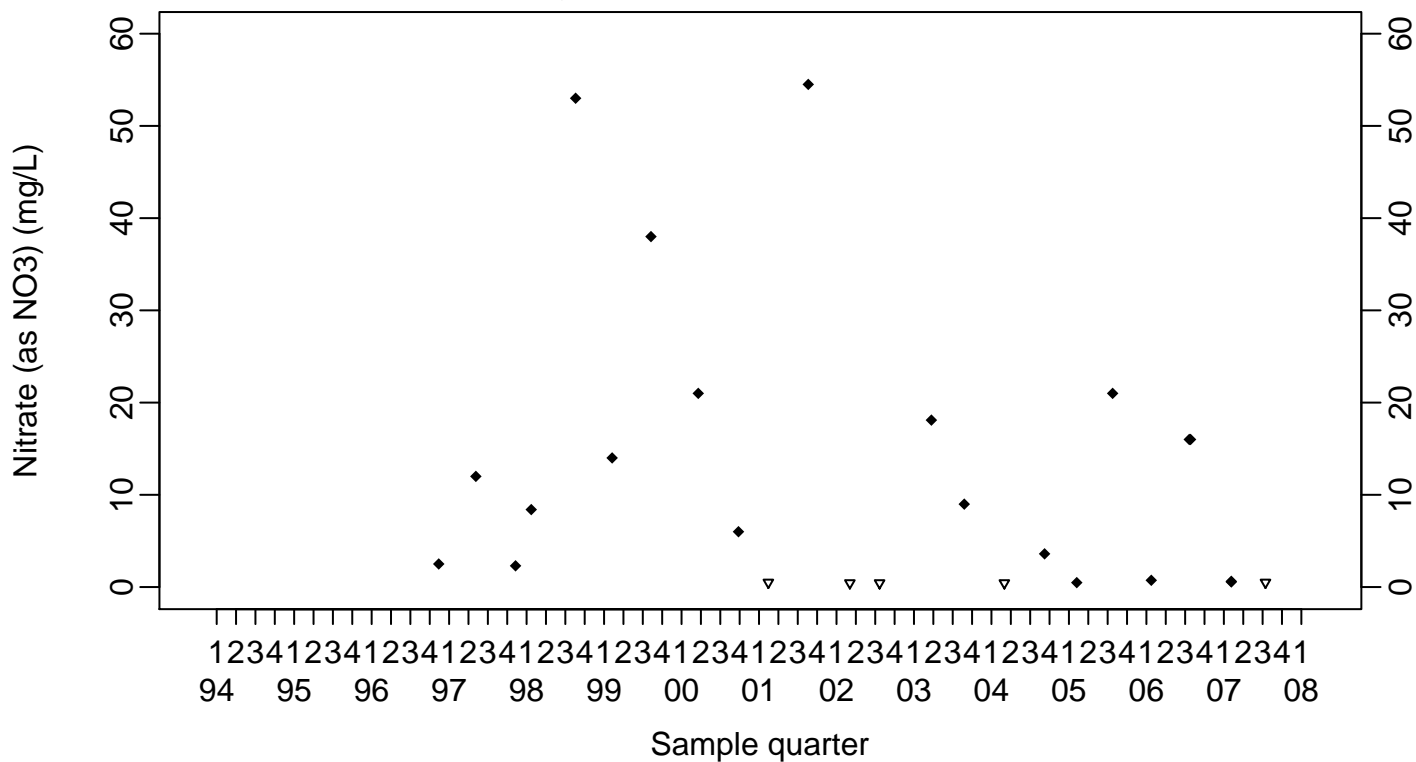


Sewage Ponds Ground Water
Nitrate (as NO₃) (mg/L)

Downgradient Monitor Well W-26R-01

◆ Above RL
▽ Below RL

Downgradient Monitor Well W-26R-05



Sewage Ponds Ground Water
Nitrate (as NO₃) (mg/L)

Downgradient Monitor Well W-26R-11

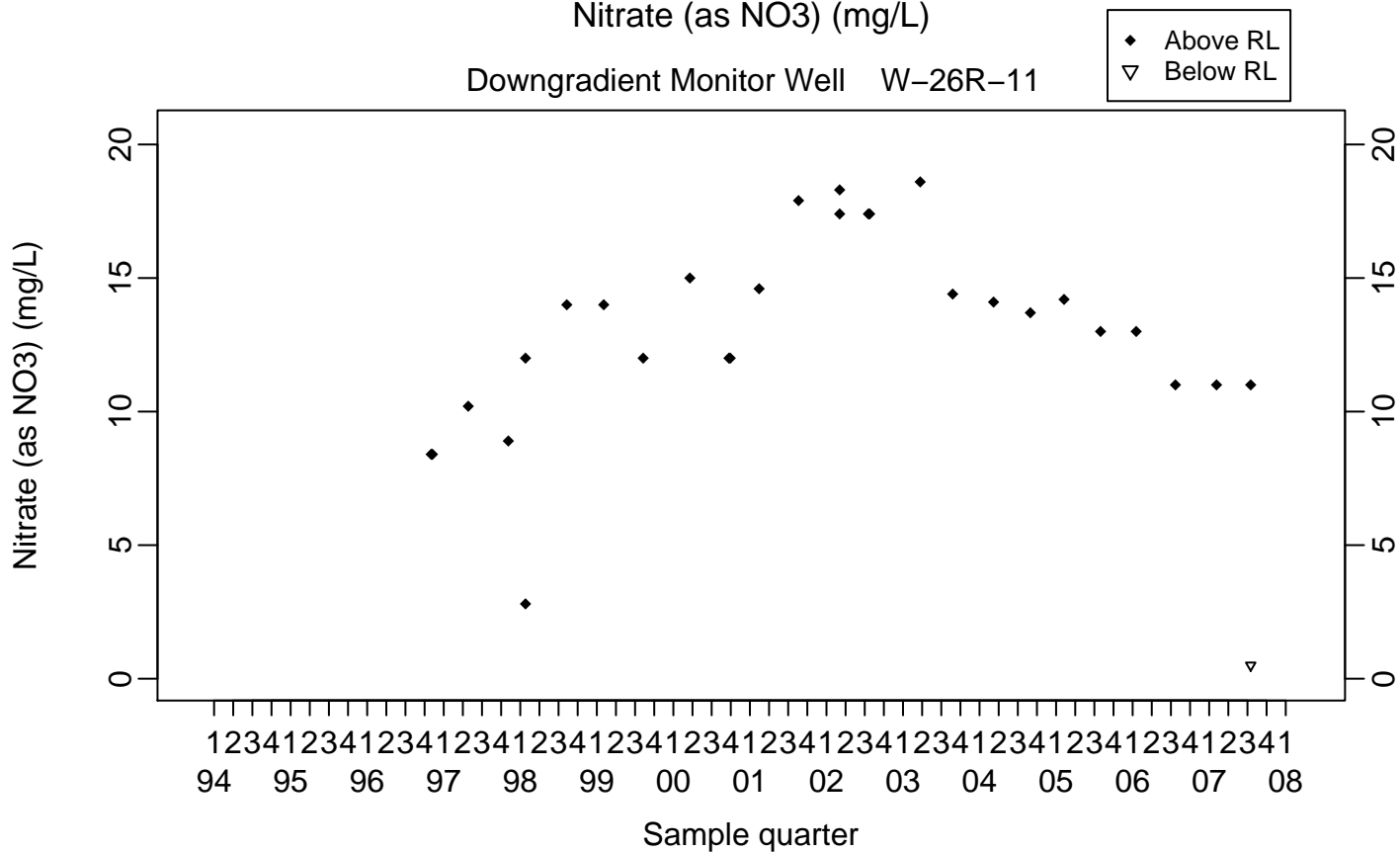


Table E-1. Sewage pond ground water semiannual monitoring results, 2007.

Parameter	Well	Permit limit	First quarter		Third quarter	
General				(field)		(field)
pH (pH units)	W-7E	None	8.48	8.42	8.41	8.41
	W-7ES	None	7.97	7.29	7.74	7.30
	W-7PS	None	Dry	Dry	Dry	Dry
	W-35A-04	None	8.10	7.44	7.73	7.31
	W-25N-20	None	7.84	7.39	7.68	7.52
	W-26R-01	None	8.14	7.58	7.81	7.43
	W-26R-05	None	8.16	7.75	7.85	7.28
	W-26R-11	None	8.05	7.32	7.64	7.25
	W-7DS	None	7.76	7.41	7.69	7.33
SC ^a	W-7E	1	1,400	1,500	1,490	1,497
	W-7ES	1	1,500	1,725	1,660	1,701
	W-7PS	1	Dry	Dry	Dry	Dry
	W-35A-04	1	1,500	1,699	1,620	1,693
	W-25N-20	1	1,600	1,712	1,650	1,696
	W-26R-01	1	1,500	1,479	1,860	1,473
	W-26R-05	1	1,100	1,129	1,070	1,109
	W-26R-11	1	1,600	1,645	1,520	1,584
	W-7DS	1	1,600	1,704	1,640	1,680
GWE ^b	(meters)	(meters)	(meters)	(feet)	(meters)	(feet)
	W-7E	None	149.56	490.55	149.32	489.88
	W-7ES	None	149.71	491.04	149.45	490.31
	W-7PS	None	Dry	Dry	Dry	Dry
	W-35A-04	None	149.32	489.76	149.19	489.48
	W-25N-20	None	148.98	488.65	148.88	488.44
	W-26R-01	None	149.02	488.77	148.94	488.66
	W-26R-05	None	149.17	489.27	148.93	488.61
	W-26R-11	None	149.08	488.97	149.04	488.96
	W-7DS	None	149.16	489.26	148.99	488.80

Table E-1. Sewage pond ground water semiannual monitoring results, 2007. (concluded)

Parameter	Well	Permit limit	First quarter		Third quarter	
Bacteria (MPN ^c /100 mL)						
Fecal coliform	W-7E	2.2	<2		<2	
	W-7ES	2.2	<2		<2	
	W-7PS	2.2	Dry		Dry	
	W-35A-04	2.2	<2		<2	
	W-25N-20	2.2	<2		<2	
	W-26R-01	2.2	<2		<2	
	W-26R-05	2.2	<2		<2	
	W-26R-11	2.2	<2		<2	
	W-7DS	2.2	<2		<2	
Total coliform	W-7E	None	<2		<2	
	W-7ES	None	<2		<2	
	W-7PS	None	Dry		Dry	
	W-35A-04	None	<2		<2	
	W-25N-20	None	<2		<2	
	W-26R-01	None	<2		<2	
	W-26R-05	None	<2		<2	
	W-26R-11	None	<2		<2	
	W-7DS	None	<2		<2	
Nutrients (mg/L)						
Nitrate (as NO ₃)	W-7E	None	<0.5		<0.5	
	W-7ES	None	9.7		7.9	
	W-7PS	None	Dry		Dry	
	W-35A-04	None	12		10	
	W-25N-20	None	11		8.0	
	W-26R-01	None	31		32	
	W-26R-05	None	0.62		<0.5	
	W-26R-11	None	11		11	
	W-7DS	None	10		8.8	

^a SC = Specific conductance.^b GWE = Ground water elevation above mean sea level.^c MPN = Most probable number (of organisms).

Appendix F

Fourth Quarter

Ground Water Elevation Contour Maps

Appendix F

Fourth Quarter Ground Water Elevation Contour Maps

F-1. References

Dibley, V., M. Taffet, J. Valett, M. Denton, S. Gregory, T. Carlsen, Z. Demir, W. Daily, D. Mason, P. McKereghan, R. Goodrich, and S. Chamberlain (2008), *2007 Annual Compliance Monitoring Report Lawrence Livermore National Laboratory Site 300*, Lawrence Livermore National Laboratory, Livermore, CA (UCRL-AR-XXXXXX-07)^a.

^a Final report with current UCRL number will be available in March 2007; these figures are referenced from that report.

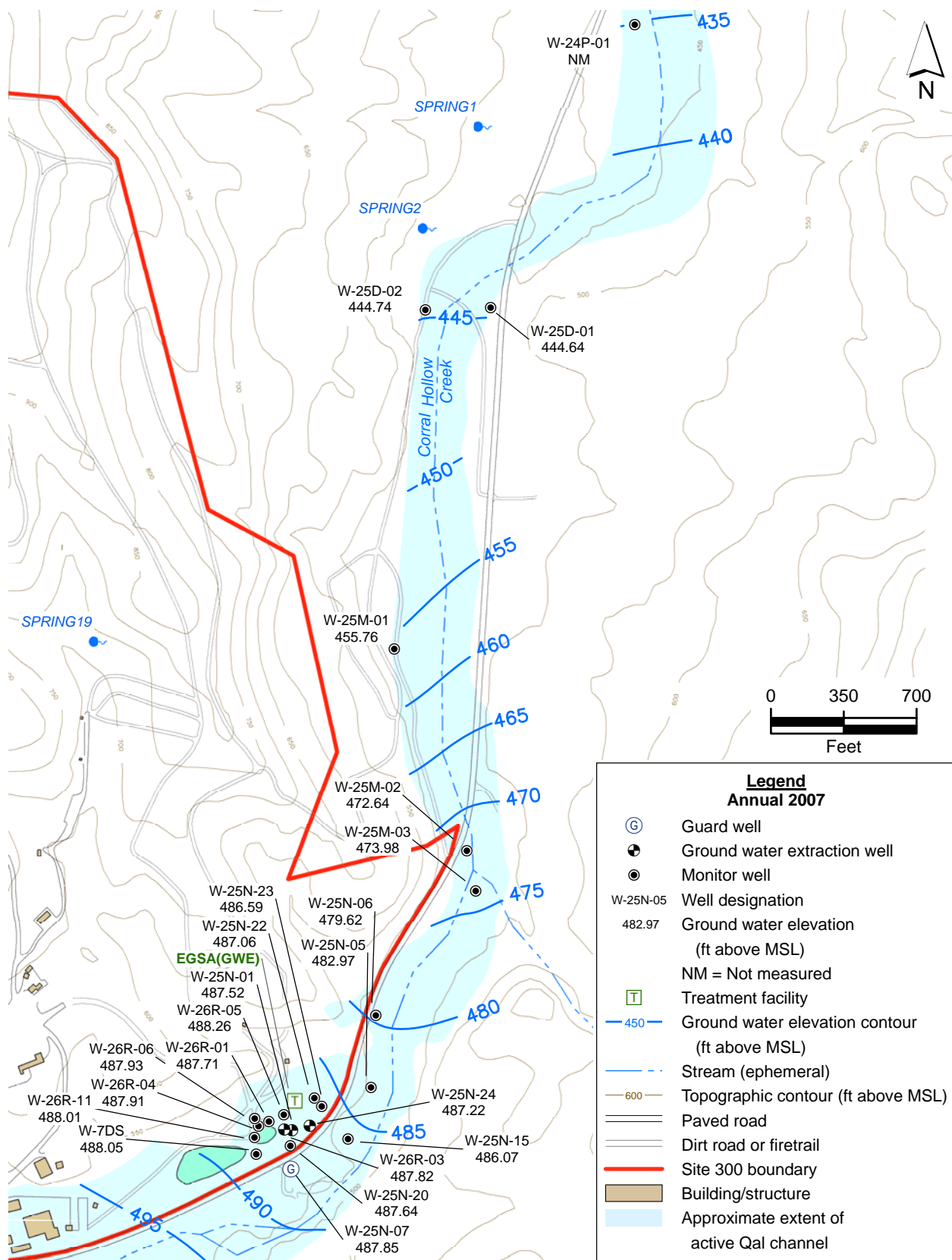


Figure 2.1-3. Eastern General Services Area OU ground water potentiometric surface map for the Qal-Tnbs₁ HSU.

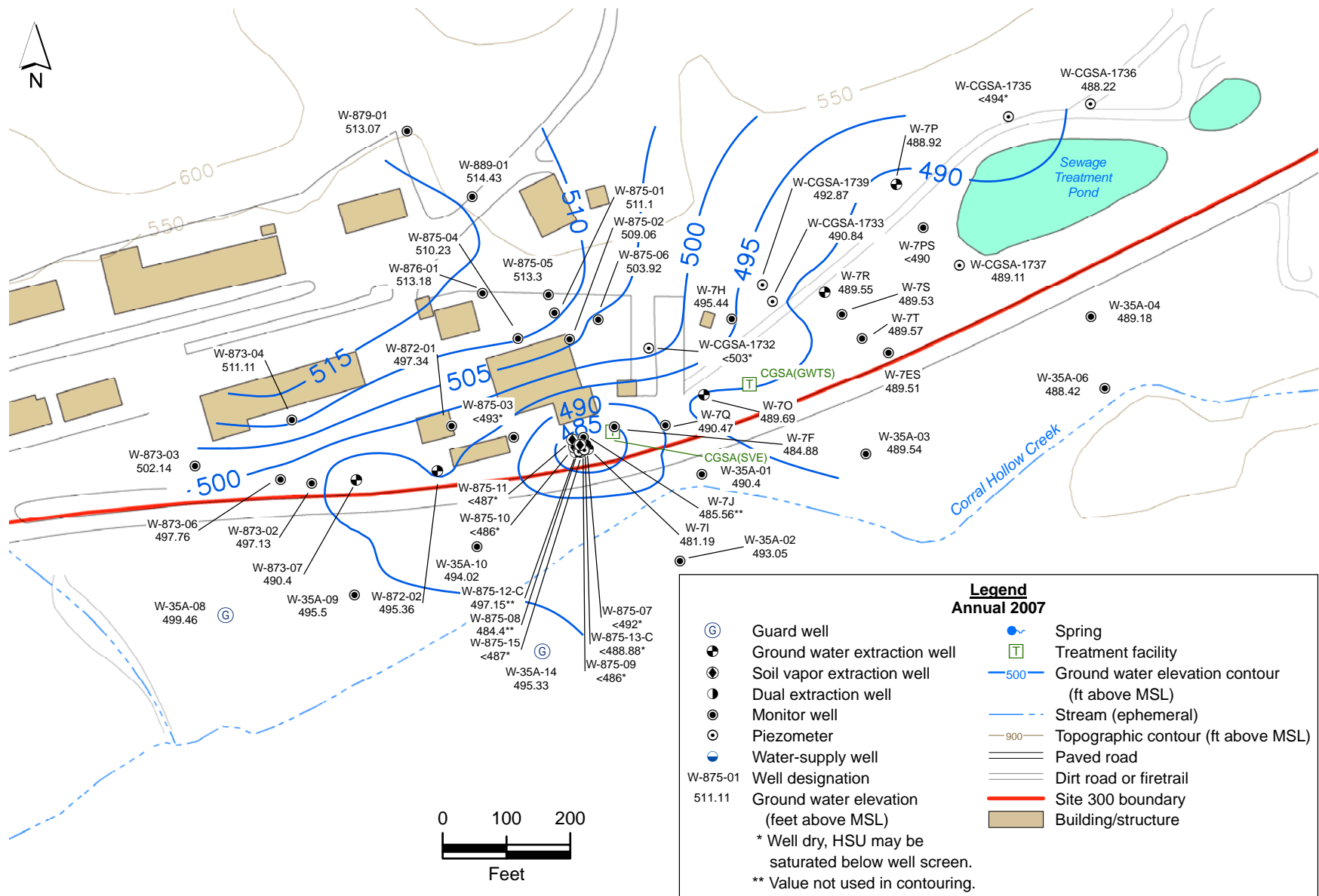


Figure 2.1-4. Central General Services Area OU ground water potentiometric surface map for the Qt-Tnsc₁ and Qal-Tnbs₁ HSUs.

Appendix G

Fourth Quarter Field Observation Logs

Percolation Pits

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 10/8/07 Inspector Aaron T. Fontes Building Number 827A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature K.C. Peshin Date 10-8-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 10/8/07 Inspector Aaron T. Fontes Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature K.C. Redman Date 10-8-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 10/8/07 Inspector Aaron T. Fontes Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <u>No</u>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature K.C. Reolus Date 10-8-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 10/8/07 Inspector Aaron T. Foster Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature K.C. Palmer Date 10-8-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 10/29/2007 Inspector Art Phelan Building Number 806A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	No	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	No	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature  Date 10/31/07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 11/12/07 Inspector Aaron Fontes Building Number 827A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No <input type="radio"/>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature K.E. Pedraza Date 11-13-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 11/12/07 Inspector Aaron Fontes Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature K.C. Roshers Date 11-13-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 11/12/07 Inspector Aaron Fontes Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<u>Yes</u> /No	<u>1/2 inch</u>
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature K.C. Peshus Date 11-13-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 11/12/07 Inspector Aaron Fontes Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<u>Yes</u> /No	<u>1/2 inch</u>
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature K.C. Pedraza Date 11-13-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 11/13/2007 Inspector Art Phelan Building Number 806A

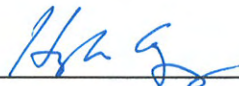
Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	No	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	No	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature



Date

12/5/07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 12/10/07 Inspector A. Fontes Building Number 827A

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	Yes/ <u>No</u>	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature K.C. Reelers Date 12-10-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 12/10/07 Inspector A. Fontes Building Number 827C

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes <input type="radio"/> No	<u>1/2 "</u>
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature K. P. Peckers Date 12-10-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 12/10/07 Inspector A. Fontes Building Number 827D

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes <input checked="" type="radio"/> No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes <input checked="" type="radio"/> No	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<input checked="" type="radio"/> Yes / No	<u>1/2"</u>
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes <input checked="" type="radio"/> No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature K. C. Beckman Date 12-10-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 12/10/07 Inspector A. Fontes Building Number 827E

Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Sandy Mathews, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	Yes/ <u>No</u>	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	Yes/ <u>No</u>	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	<u>Yes</u> /No	<u>1/2"</u>
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	Yes/ <u>No</u>	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		
		_____ _____ _____

Supervisor's Signature K.C. Reelins Date 12-10-07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.

Monthly Percolation Pit Inspection Checklist*
For Buildings 827A, 827C, 827D, 827E and 806A
Waste Discharge Requirements Order Number 96-248

Date 12/13/2007 Inspector Art Phelan Building Number 806A

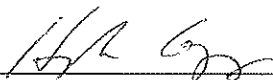
Instructions: Circle the appropriate response for each item below, and record the date and time. Provide descriptions and comments if necessary. Attach additional paper if extra space is needed.

This record is to be maintained by the Inspecting Organization for a minimum of 5 years and made available by request of EPD or regulatory personnel.

Send a completed copy to the attention of Maureen Ridley, WGMG (L-627) of ORAD, EPD.

<u>Check Items</u>	<u>Response</u>	<u>Description and Comments:</u>
1. Is water flowing from the Christy box?	No	_____
2. Are there any signs of recent overflow (damp dirt around Christy box)?	No	_____
If yes is indicated to either 1 or 2, contact the EDO and WGMG (3-6679) immediately to arrange for reporting to the regulatory agency and sample collection.		
3. Is there standing water in the Christy box?	No	_____
If yes is indicated in 3, begin measuring and recording the water level and increase inspection frequency to weekly. Notify WGMG (3-6679).		
4. Are there any other indications that the percolation pit requires maintenance (e.g., excessive build up scale, accumulation of dirt or debris).	No	_____ _____ _____
If yes to any of the above, note date, actions taken, and type of repairs when made.		_____ _____ _____

Supervisor's Signature



Date

12/13/07

* Note: This form may be modified or used as is for documenting the routine inspections of the percolation pits permitted under Waste Discharge Requirements Order Number 96-248.



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